



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



APR 20 2015

Angela Carrillo
Pelco Inc. A Delaware Corporation
3500 Pelco Way
Clovis, CA 93612-5999

Re: Notice of Preliminary Decision - Authorities to Construct
Facility Number: C-922
Project Number: C-1142156

Dear Ms. Carrillo:

Enclosed for your review and comment is the District's analysis of Pelco Inc. A Delaware Corporation's application for two Authorities to Construct for the installation of two Tier 1 certified diesel-fired emergency standby engines, at 3500 Pelco Way.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Sandra Lowe-Leseth of Permit Services at (559) 230- 5834.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:sll

Enclosures

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

Sayed Sadredin
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San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Diesel-Fired Emergency Standby IC Engine

Facility Name:	Pelco Inc., a Delaware Corp.	Date:	April 13, 2015
Mailing Address:	3500 Pelco Way Clovis, CA 93612	Engineer:	Sandra Lowe-Leseth
		Lead Engineer:	Dustin Brown
Contact Person:	Angela Carrillo		
Telephone:	(559) 388-5318		
Application #:	C-922-18-0 and C-922-19-0		
Project #:	C-1142156		
Complete:	July 30, 2014		

I. Proposal

Pelco, Inc. installed two diesel-fired emergency standby internal combustion (IC) engines powering electrical generators. The applicant did not apply for the required Authorities to Construct (ATCs) prior to installation of the engines. The operator was required to obtain permits at the time of construction; therefore, this action is subject to District Rule 2201 (New and Modified Source Review Rule).

Additionally, the applicant was able to show, through maintenance records, that the engines were installed by 2006, but was not able to provide documentation that the engines were installed at an earlier date. For purposes of determining BACT at time of installation, it will be assumed that the engines were installed in 2006, since that is the earliest record of the engines' existence at the facility. Maintenance records are attached as Appendix G.

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 (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 3500 Pelco Way in Clovis, 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 engines power electrical generators. Other than emergency standby operation, the engines may each be operated up to a certain number of hours per year for maintenance and testing purposes. The ATCM for stationary compression-ignition engines limits the number of allowable hours depending on the certified PM₁₀ emission factor. Maintenance and testing for engine C-922-18 is limited to 30 hours per year and Engine C-922-19 is limited to 50 hours per year.

V. Equipment Listing

C-922-18-0: 382 BHP [INTERMITTENT] CATERPILLAR MODEL 3306BDITA S/N 9NR04846 TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

C-922-19-0: 972 BHP [INTERMITTENT] CATERPILLAR MODEL 3412C TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The engine is equipped with:

- ☒ Turbocharger
- ☒ Intercooler/aftercooler
- ☐ Injection timing retard (or equivalent per District Policy SSP-1805, dated 8/14/1996)
- ☐ Positive Crankcase Ventilation (PCV) or 90% efficient control device
- ☐ This engine is required to be, and is UL certified

- [] Catalytic particulate filter
- [] Low (0.05%) sulfur diesel
- [x] Very Low (0.0015%) sulfur diesel

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

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

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NO_x. NO_x emissions are reduced by approximately 15% with this control technology.

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

II. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	30 (Engine '-18) or 50 (Engine '-19) hours/year (ATCM requirements)
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 ₁₀ fraction of diesel exhaust:	0.96 (CARB, 1988)

B. Emission Factors

Emission Factors For C-922-18-0		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	5.2	ARB Executive Order U-R-1-114
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.2	ARB Executive Order U-R-1-114
CO	1.4	ARB Executive Order U-R-1-114
VOC	0.2	ARB Executive Order U-R-1-114

Mass Balance Equation:

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

Emission Factors For C-922-19-0			
Pollutant	Emission Factor (g/kW-hr)	Emission Factor (g/bhp-hr)	Source
NO _x	8.0	6.0	ARB Executive Order U-R-001-0279
SO _x	—	0.0051	Mass Balance Equation Below
PM ₁₀	0.16	0.12	ARB Executive Order U-R-001-0279
CO	1.0	0.75	ARB Executive Order U-R-001-0279
VOC	0.2	0.15	ARB Executive Order U-R-001-0279

Mass Balance Equation:

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

C. Calculations

1.Pre-Project Emissions (PE1)

Since each engine is a new emissions unit, PE1 = 0 for each engine.

2.Post-Project PE (PE2)

The daily and annual PEs are calculated as follows:

$$\text{Daily PE2 (lb-pollutant/day)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/day)} / 453.6 \text{ g/lb}$$

$$\text{Annual PE2 (lb-pollutant/yr)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/yr)} / 453.6 \text{ g/lb}$$

Project Emissions (PE2) for C-922-18-0						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	5.2	382	24	30	105.1	131
SO _x	0.0051	382	24	30	0.1	0
PM ₁₀	0.2	382	24	30	4.0	5
CO	1.4	382	24	30	28.3	35
VOC	0.2	382	24	30	4.0	5

Project Emissions (PE2) C-922-19-0						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	6.0	972	24	50	308.6	643
SO _x	0.0051	972	24	50	0.3	1
PM ₁₀	0.12	972	24	50	6.2	13
CO	0.75	972	24	50	38.6	80
VOC	0.15	972	24	50	7.7	16

3.Pre-Project Stationary Source Potential to Emit (SSPE1)

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

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/yr)					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-922-1-4 *	0	0	70	0	276
C-922-3-0 *	3,760	0	0	767	3,833
C-922-4-0 *	840	0	0	183	37
C-922-5-0 *	1,497	0	511	730	0
C-922-7-0 *	0	0	730	0	0
C-922-9-0 *	0	0	2	0	0
C-922-10-0 *	0	0	0	0	4,599
C-922-11-1 *	3,504	110	365	2,957	183
SSPE1 Total	9,601	110	1,678	4,637	8,928

* Emissions taken from project C-1111718.

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 two emergency standby IC engines, permit units C-922-18 and C-922-19.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/yr)					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
SSPE1	9,601	110	1,678	4,637	8,928
C-922-18-0	131	0	5	35	5
C-922-19-0	643	1	13	80	16
SSPE2 Total	10,375	111	1,696	4,752	8,949
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offset Threshold Surpassed?	No	No	No	No	No

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 _x	9,601	10,375	20,000	No	No
SO _x	110	111	140,000	No	No
PM ₁₀	1,678	1,696	140,000	No	No
CO	4,637	4,752	200,000	No	No
VOC	8,928	8,949	20,000	No	No

As seen in the table on the preceding page, 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 3.23

Since these engines are new emissions units, BE = PE1 = 0 for all criteria pollutants.

7. SB 288 Major Modification

SB 288 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 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute a SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201, Section 3.18 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 PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (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. Detailed QNEC calculations are included in Appendix E.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in 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 installed two new emergency standby IC engines. Additionally, as determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. 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 Unit C-922-18-0 BACT Applicability				
Pollutant	Daily Emissions for unit -18-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	105.1	> 2.0	n/a	Yes
SO _x	0.1	> 2.0	n/a	No
PM ₁₀	4.0	> 2.0	n/a	Yes
CO	28.3	> 2.0 and SSPE2 ≥ 200,000 lb/yr	4,776	No
VOC	4.0	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM₁₀, and VOC emissions from engine C-922-18-0. Although daily CO emissions are greater than 2.0 lb-

CO/day, BACT is not triggered for CO because the facility's total CO emissions are less than 200,000 lb/yr.

New Unit C-922-19-0 BACT Applicability				
Pollutant	Daily Emissions for unit -19-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	308.6	> 2.0	n/a	Yes
SO _x	0.3	> 2.0	n/a	No
PM ₁₀	6.2	> 2.0	n/a	Yes
CO	38.6	> 2.0 and SSPE2 ≥ 200,000 lb/yr	4,776	No
VOC	7.7	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM₁₀, and VOC emissions from engine C-922-19-0. Although daily CO emissions are greater than 2.0 lb-CO/day, BACT is not triggered for CO because the facility's total CO emissions are less than 200,000 lb/yr.

2. BACT Guideline

Per FYI 98, if equipment installed without an ATC triggers BACT requirements, the BACT guideline in place at the time of installation is applied. If it is determined that the equipment was installed with BACT at the time of installation, the current BACT analysis is limited to the types of controls that can be applied to the specific equipment that was already installed (i.e. add-on control devices). If the equipment was installed without BACT at the time of installation, the District shall perform a complete current BACT analysis as if the engine was a new as of today.

The 382 bhp diesel engine (permit unit C-922-18-0) was manufactured in 2001. However, the applicant was only able to provide proof of the engines' existence from 2006; therefore, the applicable BACT guideline for emergency standby engines rated at least 175 bhp and less than 400 bhp (BACT Guideline 3.1.2) in place at the time of installation is dated July 31, 2002.

The 972 bhp diesel engine (permit unit C-922-19-0) was installed in 2004. However, the applicant was only able to provide proof of the engines' existence from 2006; therefore, the applicable BACT guideline for emergency standby engines rated at least 175 bhp and less than 400 bhp (BACT Guideline 3.1.2) in place at the time of installation is dated July 31, 2002. The BACT guideline for emergency standby engines rated 400 bhp or greater (BACT Guideline 3.1.3) in place at the time of installation is dated June 30, 2001.

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."

C-922-18-0

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, the engine met BACT requirements at the time of installation with the following:

- NO_x: Certified emissions of 6.9 g/bhp-hr or less
- VOC: Certified emissions of 0.2 g/bhp-hr or less
- PM₁₀: Certified emissions of 0.4 g/bhp-hr or less (T-BACT not triggered)

Therefore, any additional BACT requirements as of the date of this project will be limited to add-on control technologies for this class and category of operation. Pursuant to the requirements from current BACT guideline 3.1.1 (last updated 9/10/2013), there are no feasible add-on control technologies available for emergency diesel fired IC engines. Therefore, no additional control technologies will be required as a part of this project and all BACT requirements have been satisfied.

C-922-19-0

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix C of this report, the engine met BACT requirements at the time of installation with the following:

- NO_x: Certified emissions of 6.9 g/bhp-hr or less
- VOC: Certified emissions of 0.12 g/bhp-hr or less
- PM₁₀: Certified emissions of 0.4 g/bhp-hr or less (T-BACT not triggered)

Therefore, any additional BACT requirements as of the date of this project will be limited to add-on control technologies for this class and category of operation. Pursuant to the requirements from current BACT guideline 3.1.1, there are no feasible add-on control technologies available for emergency diesel fired IC engines. Therefore, no additional control technologies will be required as a part of this project and all BACT requirements have been satisfied.

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 these engines, and no offset calculations are required.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, SB288 Major Modifications, Federal Major Modifications

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility is not a new Major Source, not an SB 288 Major Modification, and not a Federal Major Modification, respectively.

b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant

As calculated in Section VII.C.2, daily emissions for NO_x are greater than 100 lb/day for each engine. Therefore, public notice is triggered for emissions greater than 100 lb/day.

c. Any project which results in the offset thresholds being surpassed

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

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

For this project, the proposed engines are the only emissions source that will generate an increase in Potential to Emit. Since the proposed engines' 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 because daily emissions greater than 100 lb/day for each engine.

D. Daily Emissions 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 ATCs to ensure compliance:

C-922-18-0

- {4259} Emissions from this IC engine shall not exceed any of the following limits: 5.2 g-NOx/bhp-hr, 1.4 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- {4260} Emissions from this IC engine shall not exceed 0.2 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

C-922-19-0

- {4259} Emissions from this IC engine shall not exceed any of the following limits: 6.0 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- {4260} 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, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

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)

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

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet in Appendix E, the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPSs from the Code of Federal Regulations (CFR) Title 40 Part 60.

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

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no requirements shall be included on the permit

No other subparts of 40 CFR 60 are applicable.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

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

The District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

No other subparts of 40 CFR 61 or 40 CFR 63 are applicable.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained.

Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

RMR Summary				
Categories	Emergency Diesel ICE (Unit 18-0)	Emergency Diesel ICE (Unit 19-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A ²	0.03
Chronic Hazard Index	0.00	0.00	0.00	0.01
Maximum Individual Cancer Risk	4.75E-07	1.13E-07	8.73E-07	1.87E-06
T-BACT Required?	No	No		
Special Permit Conditions?	Yes	Yes		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute Hazard Index was 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:

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- {4260} The PM10 emissions rate shall not exceed 0.2 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
- {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]
- {4262} 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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

C-922-19-0

- {4260} 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]
- {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]
- {4262} 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 PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

The new engines have a PM₁₀ emission factors 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 are also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent to, 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 engines 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 (at most) 50 hours/year. Thus, compliance is expected.
This table continues on next page	

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
<p>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>	<p>The following conditions will be included on the permits:</p> <ul style="list-style-type: none"> • {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702] • {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
<p>The owner/operator must operate and maintain the engines and any installed control devices according to the manufacturers written instructions.</p>	<p>A permit condition enforcing this requirement was shown earlier in the evaluation.</p>
<p>The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.</p>	<p>The following condition will be included on the permits:</p> <p>{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]</p>

This table continues on next page

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 permits:</p> <ul style="list-style-type: none"> • {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115] • {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115] • {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

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

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

n = moles SO₂

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

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

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

Since 1.0 ppmv is less than 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATCs to ensure compliance:

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]

California Health & Safety Code 42301.6 (School Notice)

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

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

The following table demonstrates how the proposed engines will comply with the requirements of Title 17 CCR Section 93115.

Title 17 CCR Section 93115 Requirements for In-Use Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engines 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.
If the certified PM emission factor is greater than 0.15 g/bhp-hr but less than or equal to 0.40 g/bhp-hr, the in-use engine may not be operated more than 30 hours per year for maintenance and testing purposes.	<p>The certified PM10 emission factor for permit C-922-18-0 is between 0.15 g/bhp-hr and 0.40 g/bhp-hr; therefore the following condition will be placed on the permit:</p> <p>{4262} 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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115]</p> <p style="text-align: right;">This table continues on next page</p>

Title 17 CCR Section 93115 Requirements for In-Use Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
<p>If the certified PM emission factor is greater than 0.01 g/bhp-hr but less than or equal to 0.15 g/bhp-hr, the in-use engine may not be operated more than 50 hours per year for maintenance and testing purposes.</p>	<p>The certified PM10 emission factor for permit C-922-19-0 is between 0.01 g/bhp-hr and 0.15 g/bhp-hr; therefore the following condition will be placed on the permit:</p> <ul style="list-style-type: none"> • {4262} 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]
<p>In-Use stationary emergency standby diesel-fueled CI engines (> 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (Title 13, CCR, section 2423).</p>	<p>The applicant has installed engines that are certified to the latest EPA Tier Certification level for the applicable horsepower range that were available at the time of installation.</p>
<p>Engines with a PM₁₀ emissions rate greater than 0.01 g/bhp-hr and located at schools may not be operated for maintenance and testing whenever there is a school-sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	<p>The District has verified that the engines are 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.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct C-922-18-0 and C-922-19-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-922-18-0	3020-10-C	382 bhp IC engine	\$240.00
C-922-19-0	3020-10-E	972 bhp IC engine	\$602.00

Appendixes

- A. Draft ATCs
- B. BACT Guideline and BACT Analysis for C-922-18-0
- C. BACT Guideline and BACT Analysis for C-922-19-0
- D. ARB Executive Orders
- E. HRA Summary and AAQA
- F. QNEC Calculations
- G: Maintenance Records

Appendix A

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-922-18-0

LEGAL OWNER OR OPERATOR: PELCO INC A DELAWARE CORPORATION

MAILING ADDRESS: 3500 PELCO WAY
ATTN: FACILITY MANAGER
CLOVIS, CA 93612-5620

LOCATION: 3500 PELCO WAY
CLOVIS, CA 93612-5620

EQUIPMENT DESCRIPTION:

382 BHP [INTERMITTENT] CATERPILLAR MODEL 3306BDITA S/N 9NR04846 TIER 1 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. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 5.2 g-NOx/bhp-hr, 1.4 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

C-922-18-0 : Apr 13 2015 11:01AM - LOWELES : Joint Inspection NOT Required

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8. Emissions from this IC engine shall not exceed 0.2 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
12. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
13. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
14. 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 30 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-922-19-0

LEGAL OWNER OR OPERATOR: PELCO INC A DELAWARE CORPORATION

MAILING ADDRESS: 3500 PELCO WAY
ATTN: FACILITY MANAGER
CLOVIS, CA 93612-5620

LOCATION: 3500 PELCO WAY
CLOVIS, CA 93612-5620

EQUIPMENT DESCRIPTION:

972 BHP [INTERMITTENT] CATERPILLAR MODEL 3412C TIER 1 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. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 6.0 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services
C-922-19-0 : Apr 13 2015 11:01AM - LOWELES : Joint Inspection NOT Required

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8. 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]
9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
12. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
13. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
14. {4777} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

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Appendix B
BACT Guideline and BACT Analysis
For C-922-18-0

Best Available Control Technology (BACT) Guideline 3.1.2
Last Update: 7/31/2002

Emergency Diesel I.C. Engine (= or > 175 hp and < 400 hp)

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	0.6 grams/bhp-hr	90% control (oxidation catalyst, or equal)	
NOx	Certified NOx emissions of 6.9 g/bhp-hr or less.		
PM10	0.1 grams/bhp-hr (if TBACT is triggered) 0.4 grams/bhp-hr (if TBACT is not triggered)		
SOx	Low-sulfur diesel fuel (500 ppmw sulfur or less) or Very Low-sulfur diesel fuel (15 ppmw sulfur or less), where available.		
VOC	Positive crankcase ventilation		

1. Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement. 2. A site-specific Health Risk Analysis is used to determine if TBACT is triggered. (Clarification added 05/07/01)

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

BACT Analysis for NOx Emissions:

Oxides of nitrogen (NOx) are generated from the high temperature combustion of the diesel fuel. A majority of the NOx emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NOx emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

Step 1 – Identify all possible NOx control technologies

The SJVUAPCD BACT Clearinghouse Guideline 3.1.2 identifies achieved-in-practice BACT as certified NOx emissions of 6.9 g/hp-hr or less, or turbocharger and fuel injected timing retarded 4° relative to standard setting (or equivalent per District Policy SSPE 16-1). No technologically feasible alternatives are listed.

Step 2 – Eliminate technologically infeasible options

There are no technologically infeasible options.

Step 3 – Rank remaining control technologies by control effectiveness

Certified NOx emissions of 6.9 g/hp-hr or less, or turbocharger and fuel injected timing retarded 4° relative to standard setting (or equivalent per District Policy SSPE 16-1).

Step 4 – Cost effectiveness analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 – Select BACT

The applicant is proposing a diesel-fired IC engine with NOx emissions less than 10 gram/bhp-hr and a turbocharger with aftercooler. As the applicant is proposing the most effective control technology listed in Step 1 above, BACT requirements for NOx are met.

BACT Analysis for VOC Emissions

Volatile organic compounds are emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.2, identifies achieved in practice BACT for VOC emissions from emergency diesel IC engines ≥ 175 and less than 400 bhp as follows:

- 1) Positive crankcase ventilation

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

The District accepts controls proven to be equally or more effective than the control option listed.

- 2) Tier 1 CARB-certified IC engine (certified VOC emission rate of 0.2 g/bhp-hr).

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

% VOC controlled from PCV

Using AP-42 values to estimate the uncontrolled VOC emissions from a diesel-fired IC engine, (1.12 exhaust + 0.02 g/hp-hr crankcase emissions) = 1.14 g/hp-hr (AP-42 Table 3.3-1 Emissions Factors for Uncontrolled Gasoline and Diesel Industrial Engines)

$$\text{PCV control efficiency} = [1.14 - (1.12 + 0.02 (.9))]/1.14 \times 100 \\ = 2\%$$

% VOC controlled from Tier 1 certified diesel IC engine

As calculated in Section VII.B of this application review, the VOC emission factor from the Tier 1 certified IC engine proposed in this project is 0.2 g/bhp-hr.

An estimate of the VOC control efficiency can be calculated by comparing this value to the VOC emission factor of an uncontrolled diesel IC engine.

$$\text{Proposed Engine VOC control efficiency} = (1.14 - 0.2)/1.14 = 83\%$$

Ranking the controls according to the above calculations:

1st – Certified VOC emission rate of 0.2 g/bhp-hr (83%)

2nd – PCV (2%)

d. Step 4 - Cost effectiveness analysis

The highest ranked alternative from Step 3 has been proposed by the applicant. Therefore, per SJVUAPCD BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions is a Tier 1 CARB-certified IC engine (certified VOC emission rate of 0.2 g/bhp-hr) (Achieved-in-Practice). The proposed engine is a Tier 1 CARB-certified engine (certified VOC emissions of 0.2 g/bhp-hr); therefore, BACT is satisfied.

BACT Analysis for PM₁₀ Emissions

Particulate Matter is emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 3.1.2 identifies PM₁₀ emissions of 0.4 grams/bhp-hr or less (if TBACT is not triggered) as achieved-in-practice BACT. There are no technologically feasible alternatives listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

0.4 grams/bhp-hr (if TBACT is not triggered)

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for PM₁₀ are met.

Appendix C
BACT Guideline and BACT Analysis
For C-922-19-0

Best Available Control Technology (BACT) Guideline 3.1.3
Last Update: 6/30/2001

Emergency Diesel I.C. Engine = or > 400 hp

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	2.0 g/bhp-hr	= or < 1.4 grams/bhp-hr	
NOx	Certified emissions of 6.9 g/bhp-hr or less		
PM10	0.1 grams/bhp-hr (if TBACT is triggered)		
	0.4 grams/bhp-hr (if TBACT is not triggered)		
SOx	Low-sulfur diesel fuel (500 ppmw sulfur or less) or Very Low-sulfur diesel fuel (15 ppmw sulfur or less), where available.		
VOC	Positive crankcase ventilation		

- 1. Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement.*
- 2. A site-specific Health Risk Analysis is used to determine if TBACT is triggered.
(Clarification added 05/07/01)*

BACT Analysis for NOx Emissions

Oxides of nitrogen (NO_x) are generated from the high temperature combustion of the diesel fuel. A majority of the NO_x emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO_x emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

Step 1 – Identify all possible NOx control technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine at the time of installation as certified NO_x emissions of 6.9 g/hp-hr or less. No technologically feasible alternatives are listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically feasible options listed.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Certified NO_x emissions of 6.9 g/hp-hr or less.

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for NO_x are met.

BACT Analysis for VOC Emissions

Volatile organic compounds are emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.2, identifies achieved in practice BACT for VOC emissions from emergency diesel IC engines ≥ 400 bhp as follows:

- 1) Positive crankcase ventilation

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

The District accepts controls proven to be equally or more effective than the control option listed.

- 2) Tier 1 CARB-certified IC engine (certified VOC emissions of 0.12 g/bhp-hr)

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

% VOC controlled from PCV

Using AP-42 values to estimate the uncontrolled VOC emissions from a diesel-fired IC engine, (1.12 exhaust + 0.02 g/hp-hr crankcase emissions) = 1.14 g/hp-hr (AP-42 Table 3.3-1 Emissions Factors for Uncontrolled Gasoline and Diesel Industrial Engines)

$$\text{PCV control efficiency} = [1.14 - (1.12 + 0.02 (.9))]/1.14 \times 100 \\ = 2\%$$

% VOC controlled from Tier 1 certified diesel IC engine

As calculated in Section VII.B of this application review, the VOC emission factor from the Tier 1 CARB-certified IC engine proposed in this project is 0.12 g/bhp-hr.

An estimate of the VOC control efficiency can be calculated by comparing this value to the VOC emission factor of an uncontrolled diesel IC engine.

$$\text{Proposed Engine VOC control efficiency} = (1.14 - 0.12)/1.14 = 89\%$$

Ranking the controls according to the above calculations:

1st – VOC emission rate of 0.12 g/bhp-hr (89%)

2nd – PCV (2%)

d. Step 4 - Cost effectiveness analysis

The highest ranked alternative from Step 3 has been proposed by the applicant. Therefore, per SJVUAPCD BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions is a Tier 1 CARB-certified IC engine (VOC emission rate of 0.12 g/bhp-hr) (Achieved-in-Practice). The proposed engine is a Tier 1 CARB-certified IC engine; therefore, BACT is satisfied.

BACT Analysis for PM₁₀ Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine at the time of installation as certified PM₁₀ emissions of 0.4 g/hp-hr or less (T-BACT was not triggered per HRA Summary in Appendix E). No technologically feasible alternatives are listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Certified PM₁₀ emissions of 0.4 g/bhp-hr (T-BACT not triggered).

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for PM₁₀ are met.

Appendix D

ARB Executive Orders

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-114
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

IT IS ORDERED AND RESOLVED: That the following diesel engines and the exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Generator and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

<u>Engine Family</u>	<u>Displacement</u>		<u>Exhaust Emission Control Systems and Special Features</u>
	<u>Liters</u>	<u>Cubic Inches</u>	
YCPXL10.5MRD	10.5	644	Smoke Puff Limiter Turbocharger Charge Air Cooler

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/hp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak-values from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	<u>Exhaust Emissions (g/hp-h)</u>				<u>Smoke Opacity (%)</u>		
	<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.2	1.4	5.2	0.2	17	3	39

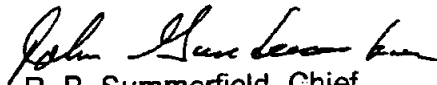
BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels—1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 et seq.).

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

Executed at El Monte, California this 7 day of December 1999.



R. B. Summerfield, Chief
Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

E0: 4-R-1-116

Manufacturer: CATERPILLAR INC.

Process Code: New Submission

EPA Engine Family: YCPXL10.5MRD

N/A

Manufacturer Family Name:

1. Engine Code	2. Engine Model	3. BHP @ RPM (SAE Gross)	4. Fuel Rate: mm/stroke @ peak HP (for diesel only)	5. Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6. Torque @ RPM (SEA Gross)	7. Fuel Rate: mm/stroke @ peak torque	8. Fuel Rate: (lbs/hr) @ peak torque	9. Emission Control Device Per SAE J1930
Note: Peak Hp and Peak Torque fuel rates are nominal values. Due to production engine avgs. these fuel rates may change.								
1 - Cert Engine	3306	397 @ 1800	243	147.0	1448 @ 1200	337	136.0	EM, DI, TC, SPL,
2	3306	340 @ 1800	197	119.0	1248 @ 1200	239	96.0	EM, DQAC, SPL,
3	3306	300 @ 2200	154	114.0	1007 @ 1400	195	92.0	EM, DQAC, SPL,
4	3306	360 @ 2200	181	134.0	1177 @ 1400	225	106.0	EM, DQAC, SPL,
5	3306	345 @ 2200	174	129.0	1120 @ 1400	214	101.0	EM, DQAC, SPL,
6	3306	335 @ 2200	170	126.0	1080 @ 1400	206	97.0	EM, DQAC, SPL,
7	3306	315 @ 2200	160	118.0	1008 @ 1400	191	90.0	EM, DQAC, SPL,
8	3306	300 @ 2200	146	108.0	874 @ 1400	187	88.0	EM, DQAC, SPL,
9	3306	370 @ 2000	195	131.0	1244 @ 1400	238	112.0	EM, DQAC, SPL,
10	3306	355 @ 2000	188	127.0	1184 @ 1400	225	106.0	EM, DQAC, SPL,
11	3306	335 @ 2000	177	119.0	1100 @ 1400	210	99.0	EM, DQAC, SPL,
12	3306	325 @ 2000	172	116.0	1058 @ 1400	200	94.0	EM, DQAC, SPL,
13	3306	305 @ 2000	161	108.0	977 @ 1400	187	88.0	EM, DQAC, SPL,
14	3306	375 @ 1800	217	131.0	1444 @ 1350	244	111.0	EM, DQAC, SPL,
15	3306	360 @ 1800	210	127.0	1355 @ 1350	228	104.0	EM, DQAC, SPL,
16	3306	335 @ 1800	197	119.0	1232 @ 1200	242	98.0	EM, DQAC, SPL,
17	3306	320 @ 1800	185	112.0	1139 @ 1350	196	89.0	EM, DQAC, SPL,
18	3306	300 @ 1800	174	105.0	1050 @ 1350	181	82.0	EM, DQAC, SPL,
19	3306	306 @ 2000	163	109.4	1004 @ 1400	191	89.9	EM, DQAC, SPL,
20	3306	306 @ 2000	168	113.1	1004 @ 1400	199	93.9	EM, DQAC, SPL,
21	3306	382 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DQAC, SPL,
22	3306	349 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DQAC, SPL,
23	3306	349 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DQAC, SPL,
24	3306	300 @ 1800	176	107.0	1016 @ 1200	198	80.0	EM, DQAC, SPL,
25	3306	300 @ 2000	162	109.0	1006 @ 1400	190	90.0	EM, DQAC, SPL,
26	3306	250 @ 1800	145	88.0	846 @ 1200	166	67.0	EM, DQAC, SPL, CAC



California Environmental Protection Agency

AIR RESOURCES BOARD**CATERPILLAR, INC.****EXECUTIVE ORDER U-R-001-0279**New Off-Road
Compression-Ignition Engines

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

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

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

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2005	5CPXL27.0MRT	27.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			Generator	

The engine models and codes are attached.

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

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NO _x	NMHC+NO _x	CO	PM	ACCEL	LUG	PEAK
KW > 560	Tier 1	STD	9.2	1.3	N/A	11.4	0.54	N/A	N/A	N/A
		CERT	0.2	8.0	—	1.0	0.16	—	—	—

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

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

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

Executed at El Monte, California on this 7th day of December 2004.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

U-R-001-0279

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 5CPXL27.0MRT
Mfr Family Name: NA
Process Code: New Submission

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
Note: Peak Hp 1 - Cert Engine 2	and Peak Torque 3412 3412	fuel rates are 1063@1800 991@1800	nominal values. 307 274	Due to product- 371.6 332.0	ion engine avgs. N/A N/A	these fuel rates N/A N/A	may change. N/A N/A	CAC ₂ EM, DI, TC, ECM, CAC ₂ EM, DI, TC, ECM,

Appendix E

HRA Summary and AAQA

Revised
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Sandra Lowe-Leseth - Permit Services
From: Kyle Melching - Permit Services
Date: October 9, 2014
Facility Name: Pelco Inc.
Location: 3500 Pelco Wy., Clovis
Application #(s): C-922-18-0 & 19-0
Project #: C-1142156

A. RMR SUMMARY

RMR Summary				
Categories	Emergency Diesel ICE (Unit 18-0)	Emergency Diesel ICE (Unit 19-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A ²	0.03
Chronic Hazard Index	0.00	0.00	0.00	0.01
Maximum Individual Cancer Risk	4.75E-07	1.13E-07	5.88E-07	1.59E-06
T-BACT Required?	No	No		
Special Permit Conditions?	Yes	Yes		

1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.

2 Acute Hazard Index was 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 18-0

1. The PM10 emissions rate shall not exceed **0.2 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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

Unit 19-0

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 September 23, 2014, to revise an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two emergency diesel IC engines. Both engines were installed without ATC's. This revision will update the maximum annual hours of operation for unit 18-0. The maximum testing and maintenance hours will go from 50 hours/yr to 30 hours/yr.

II. Analysis

For the diesel engines, Technical Services used diesel exhaust emissions provided by the processing engineer. 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; therefore, a refined Health Risk Assessment was required and performed for the unit. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Fresno to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Carcinogenic Risk.

The following parameters were used for the reviews:

Analysis Parameters Unit 18-0			
Source Type	Point	Location Type	Urban
Stack Height (m)	0.61	Type of Closest Receptor	Business
Stack Diameter (m)	0.15	Closest Receptor (m)	27
Stack Temp (K)	805	BHP	382
Stack Velocity (m/s)	55.5	Max Hours per Year	30
		PM₁₀ g/hp-hr	0.2

Analysis Parameters Unit 19-0			
Source Type	Point	Location Type	Urban
Stack Height (m)	1.22	Type of Closest Receptor	Business
Stack Diameter (m)	0.2	Closest Receptor (m)	27
Stack Temp (K)	806	BHP	972
Stack Velocity (m/s)	77.6	Max Hours per Year	50
		PM ₁₀ g/hp-hr	0.12

Technical Services also performed modeling for criteria pollutants NO_x, CO, SO_x, PM₁₀, and PM_{2.5}. For Unit 18-0, the emission rates used for criteria pollutant modeling were 219 lb/yr NO_x, 59 lb/yr CO, 0 lb/yr SO_x, and 5 lb/yr PM₁₀. For Unit 19-0, the emission rates used for criteria pollutant modeling were 643 lb/yr NO_x, 80 lb/yr CO, 1 lb/yr SO_x, and 13 lb/yr PM₁₀.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICEs	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

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

III. Conclusions

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

Unit 18-0

The cancer risk associated with the operation of the proposed diesel IC engine is **4.75E-07**; which 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.

Unit 19-0

The cancer risk associated with the operation of the proposed diesel IC engine is **1.13E-07**; which 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 units.

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Stack Parameter Worksheets
- D. DICE Screening Risk Tool
- E. Facility Summary
- F. AAQA Summary
- G. AAQA Parameters Summary

Appendix F

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

$QNEC = PE2 - PE1$, where:

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

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

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

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

QNEC for C-922-18-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	151	37.8
SO _x	0	0.0
PM ₁₀	5	1.3
CO	35	8.8
VOC	5	1.3

QNEC for C-922-19-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	643	160.8
SO _x	1	0.3
PM ₁₀	13	3.3
CO	80	20.0
VOC	16	4.0

Appendix G

Maintenance Records

QUINN
POWER SYSTEMS



3500 Shepherd St, City of Industry, CA 90801 (562) 463-6000

WORK ORDER INVOICE

PLEASE MAKE REMITTANCE TO

QUINN COMPANY

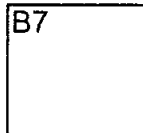
DEPT 9665

LOS ANGELES, CA 90084-9665

SOLD TO: 001005 * 000055 001

PELCO
PO BOX 3075
3500 PELCO WAY
CLOVIS, CA 93613-3075

SHIP TO:



INVOICE NUMBER	INVOICE DATE	CUSTOMER NO.	CUSTOMER ORDER NUMBER	STONE	DNV	SALESMAN	TERMS	PAGE
WO350024796	04-30-07	502470E		35	E	L01	2	1
WORK ORDER	DATE	PC	LE	MC	SHIP VIA	INVOICE SEQ. NO.		
FP37066	04-24-07	10	10	10		3545554		
MAKE	MODEL	SERIAL NUMBER	EQUIPMENT NUMBER	METER READING	GAGE TO NO.			
AA	3412	0TFT00339	CE08742	1.0	CE08742			
QUANTITY	ITEM	UNIT	DESCRIPTION	LIMIT PRICE	EXTENSION			
REPAIR ENG JACKET WATER HEATER								
17.00			MILEAGE	LBR	196.00 *			
					29.75			
TOTAL MISC CHGS					SEG. 01	29.75 *		
SEGMENT 01 TOTAL						225.75 T		
ENVIRONMNT S/CHG						24.00 T		
STATE SALES TAX 7.25						1.74 T		
FRESNO CO. TAX .725%						.17 T		
MAY - 7 2007								
WARRANTY PARTS, SIX MONTHS, LABOR, 90 DAYS UNLESS OTHERWISE STATED					PAY THIS AMOUNT 251.66			
ALL REPLACED PARTS ARE HELD 30 DAYS					AMOUNT CREDITED 85800			

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL, terms are Net by the 10th of the month following purchase. A FINANCE CHARGE of 1-1 1/2% per month (18% PER ANNUM) will be charged on the past due balance. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of default in the payment of any amount due, and if the account is placed in the hands of any agency or attorney for collection of legal action, the purchaser agrees to pay finance charges and charges equal to the cost of collection (as permitted by laws governing these transactions). Acceptance by customer of the parts, service or equipment, listed above is the customer's agreement to be bound by the credit and collection terms set forth above.

Customer Copy

QUINN
POWER SYSTEMS



3500 Shepherd St, City of Industry, CA 90601 (562) 463-6000

WORK ORDER INVOICE

PLEASE MAKE REMITTANCE TO:

QUINN COMPANY

DEPT. 9665

LOS ANGELES, CA 90094-9665

B5

SOLD TO:

00019-000-000-00000-006

003203

SHIP TO:

PELCO
PO BOX 3075
3500 PELCO WAY
CLOVIS, CA 93612

PELCO
3500 PELCO WAY
CLOVIS, CA. 93612

AUG 09 2006

INVOICE NUMBER	INVOICE DATE	CUSTOMER NO.	CUSTOMER ORDER NUMBER	QUANTITY	UNIT	SALES TAX	TERMS	DATE
W0350022698	07-31-06	502470E	101354	35	E	L01	2	1
WORK ORDER	DATE	QUANTITY	UNIT	SALES TAX	TERMS	DATE		
FP35324	07-07-06	10	10	10			3124722	
MAKE	MODEL	SERIAL NUMBER	EQUIPMENT NUMBER	WATER HEATING	CHECK NO.			
AA	3306	09NR04846		65.0	CE06919			
QUANTITY	UNIT	DESCRIPTION	PRICE	EXTENSION				
LEVEL 1 PM ENGINE & GENERATOR								
				ALL	305.00 *			
SEGMENT 01 TOTAL					305.00 T			

ADDITIONAL PARTS PM 1								
1	QIAB 01E	OIL/COOLANT SAMPLES	13.00	13.00				
2	248-7518	15W/40 1 GAL S	14.25	28.50				
TOTAL PARTS				SEG. 02	41.50 *			
SEGMENT 02 TOTAL					41.50 T			

ENVIRONMENT S/CHG					24.00 T			
MISC HARDWARE					2.08 T			
STATE SALES TAX 7.25					3.96 T			
FRESNO CO. TAX .725%					.40 T			
CLOVIS CITY TAX .200%					.16 T			
TOTAL					377.10			

PELCO AF
AUG - 4 2006
RECEIVED

WARRANTY: PARTS, SIX MONTHS; LABOR, 90 DAYS UNLESS OTHERWISE STATED.
ALL REPLACED PARTS ARE HELD 30 DAYS.

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL, terms are: Net by the 10th of the month following purchase. A FINANCE CHARGE of 1-1/2% per month (18% PER ANNUM) will be charged on the past due balance. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the payment of any amount due, and if the account is placed in the hands of any agency or attorney for collection or legal action, the purchaser agrees to pay finance charges and charges equal to the cost of collection (as permitted by laws governing these transactions). Acceptance by customer of the parts, service or equipment, listed above is the customer's agreement to be bound by the credit and collection terms set forth above.

Customer Copy

QUINN
POWER SYSTEMS

3500 Shepherd St, City of Industry, CA 90601 (562) 463-6000

WORK ORDER INVOICE

PLEASE MAKE REMITTANCE TO:

QUINN COMPANY

DEPT. 9665

LOS ANGELES, CA 90064-9665

B6

SOLD TO:

00018-000-000-00000-006

003203

SHIP TO:

PELCO
PO BOX 3075
3500 PELCO WAY
CLOVIS, CA 93612PELCO
3500 PELCO WAY
CLOVIS, CA. 93612

AUG 3 8 2008

INVOICE NUMBER	INVOICE DATE	CUSTOMER NO.	CUSTOMER ORDER NUMBER	STORE	NO.	SALESMAN	TERMS	PAGE
WO350022697	07-31-06	502470E	101375	35	0		2	2
INVOICE ORDER	INVOICE DATE	PE	TE	MC	SH	HA	INVOICE SEG. NO.	
FP35323	07-07-06	10	10	10			3124721	
MAKE	MODEL	SERIAL NUMBER	EQUIPMENT NUMBER	METER READING	WATT	TO NO.		
AA	D100P2	*OLY00000TNPS00969*		34.0		FE07803		
QUANTITY	ITEM	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION			
1.00	51-582518		7232 BATTERY		99.59			
			TOTAL MISC CHGS	SEG. 03	99.59 *			
			SEGMENT 03 TOTAL		144.59 T			
ENVIRONMENT S/CHG					24.00 T			
MISC HARDWARE					8.73 T			
STATE SALES TAX 7.25					21.32 T			
FRESNO CO. TAX .725%					2.13 T			
CLOVIS CITY TAX .30%					.88 T			

AUG 5 7 2008

N/R = NON RETURNABLE

WARRANTY: PARTS, SIX MONTHS; LABOR, 90 DAYS UNLESS OTHERWISE STATED.
ALL REPLACED PARTS ARE HELD 30 DAYS.

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL, terms are: Net by the 10th of the month following purchase. A FINANCE CHARGE of 1-1/2% per month (18% PER ANNUM) will be charged on the past due balance. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of default in the payment of any amount due, and if the account is placed in the hands of any agency or attorney for collection or legal action, the purchaser agrees to pay finance charges and charges equal to the cost of collection (as permitted by laws governing these transactions). Acceptance by customer of the parts, service or equipment, listed above is the customer's agreement to be bound by the credit and collection terms set forth above.

Customer Copy

PAY THIS AMOUNT	771.33
AMOUNT CREDITED	

QUINN
POWER SYSTEMS



3500 Shepherd St, City of Industry, CA 90601 (562) 463-6000

WORK ORDER INVOICE

PLEASE MAKE REMITTANCE TO:

QUINN COMPANY

DEPT. 9665

LOS ANGELES, CA 90084-9665

B3

SOLD TO:

00017-000-000-00000-006

003203

SHIP TO:

PELCO
PO BOX 3075
3500 PELCO WAY
CLOVIS, CA 93612

PELCO
3500 PELCO WAY
CLOVIS, CA. 93612

GREG CRASS 292-1981

AUG 5 2006

INVOICE NUMBER	INVOICE DATE	CUSTOMER NO.	CUSTOMER ORDER NUMBER	STORE	DIV.	SERIES	TERMS	PAGE
WO350022696	07-31-06	502470E	101375	35	0		2	2
FROM ORDER	DOC DATE	FC	FE	MC	SHIP TO	INVOICE NO.		
FP35322	07-07-06	10	10	10		3124720		
MAKE	MODEL	SERIAL NUMBER	EQUIPMENT NUMBER	METER READING	WAGE ID NO.			
AA	D200P4	ONNS01113		35.0	FE08335			
QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION				
STATE SALES TAX 7.25				19.88 T				
FRESNO CO. TAX .725%				1.99 T				
CLOVIS CITY TAX .30%				.82 T				

N/R = NON RETURNABLE

WARRANTY: PARTS, SIX MONTHS; LABOR, 90 DAYS UNLESS OTHERWISE STATED
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Customer Copy