



JUL 11 2013

Michael Burton
Defense Distribution Depot San Joaquin - Tracy
PO Box 960001
Stockton, CA 95296

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-263
Project Number: N-1131649

Dear Mr. Burton:

Enclosed for your review and comment is the District's analysis of Defense Distribution Depot San Joaquin - Tracy's application for an Authority to Construct for the replacement of two diesel fired emergency engines, at 25600 Chrisman Road in Tracy, CA.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Mark Schonhoff of Permit Services at (209) 557- 6448.

Sincerely,

David Warner
Director of Permit Services

DW:MJS

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

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

Newspaper notice for publication in Stockton Record and for posting on
valleyair.org

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AUTHORITIES TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Defense Distribution Depot San Joaquin - Tracy for the replacement of two diesel fired emergency engines, at 25600 Chrisman Road in Tracy, CA.

The analysis of the regulatory basis for this proposed action, Project #N-1131649, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. For additional information, please contact the District at (209) 557-6400. Written comments on this project must be submitted by August 15, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 4800 ENTERPRISE WAY, MODESTO, CA 95356.**

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

Facility Name:	Defense Depot - Tracy	Date:	June 26, 2013
Mailing Address:	PO Box 960001 Stockton, CA 95296	Engineer/ Specialist:	Mark Schonhoff

Contact Person: Brenda Mahan

Telephone: (209) 839-4129

Application #: N-263-48-0 and N-263-49-0

Project #: N-1131649

Complete: June 19, 2013

I. Proposal

The Tracy Defense Depot is proposing to install two 1,490 bhp Cummins QST-30-G5-NR2 (or equivalent) diesel-fired emergency standby internal combustion (IC) engine that will power electrical generators. The units will replace the 1,085 bhp engines operating under District permits N-263-15 and N-263-16.

II. Applicable Rules

- Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
- Rule 2410 Prevention of Significant Deterioration (6/16/11)
- 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

25600 Chrisman Road (Generator Building 201A)
Tracy, CA

The facility is not located within 1,000 feet of a K-12 school.

IV. Process Description

The emergency standby engines will power electrical generators. Other than emergency standby operation, each engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

Same for each unit:

1,490 BHP CUMMINS QST-3-G5-NR2 (OR EQUIVALENT) TIER 2 CERTIFIED
DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL
GENERATOR

VI. Emission Control Technology Evaluation

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

NO_x, 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 C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

Although Tier 4i requirements for this category of engine went into effect in 2011, CARB regulations and District policy allows for the availability of Tier 4i units to be accounted for. CARB's Stationary ATCM exemption §93115.3(u) says, "If the Executive Officer or District finds, based on verifiable information from the engine manufacturer, distributor, or dealer, that current model year engines meeting the current emission standards are not available or not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings, then the Executive Officer or the District may allow the sale, purchase, or installation of a new stock engine meeting the emission standards

from the previous model year to meet the new stationary diesel-fueled engine emission standards pursuant to title 13 of the California Code of Regulations or 40 CFR part 89.” The District has thoroughly investigated, with each of the common manufacturers’, the availability of Tier 4i units in this size range, and has found them to be currently unavailable. Since Tier 4i units are not available, as described above, the installation of a Tier 2 unit is acceptable, as Tier 2 is the prior published Tier in this engine’s size range.

SO_x:

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

VII. General Calculations

A. Assumptions

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 ₁₀ fraction of diesel exhaust:	0.96 (CARB, 1988)

B. Emission Factors

The emission factors are the same for each unit. An emission data sheet is in appendix C of this document.

EF _{NO_x} :	4.5 g/bhp-hr (emission data sheet)
EF _{CO} :	2.6 g/bhp-hr (emission data sheet)
EF _{VOC} :	0.3 g/bhp-hr (emission data sheet)
EF _{PM₁₀} :	0.15 g/bhp-hr (emission data sheet)
EF _{SO_x} :	0.0047 g/bhp-hr – see below

Sulfur Content of Diesel:	15 ppmw
Density of Diesel:	7.1 lb/gal
Fuel Use:	72.2 gal/hr
Engine Rating:	1,490 bhp

$$EF_{SO_x} = [(15 \text{ lb S}/10^6 \text{ lb fuel})(7.1 \text{ lb fuel/gal})(72.2 \text{ gal/hr})(2 \text{ lb SO}_2/\text{lb S}) \\ \times (453.6 \text{ g/lb})] / (1,490 \text{ bhp}) = 0.0047 \text{ g/bhp-hr}$$

Greenhouse Gasses (CARB GHG Emission Factors):

EF_{CO2e} (diesel) = 0.0001868 MT/bhp-hr

EF_{CO2e} (natural gas) = 52.92 kg/MMBtu

C. Calculations

1. Pre-Project Emissions (PE1)

The units are new, therefore, PE1 = 0.

2. Post-Project PE (PE2)

The daily and annual PE's are the same for each unit and are calculated as follows:

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	4.5	1,490	24	50	354.8	739
SO _x	0.0047	1,490	24	50	0.4	1
PM ₁₀	0.15	1,490	24	50	11.8	25
CO	2.6	1,490	24	50	205.0	427
VOC	0.3	1,490	24	50	23.7	49

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

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

The following are from the Application Review document for project N-1110359.

Permit #	SSPE1 (lb/yr)				
	NOx	CO	VOC	SOx	PM10
N-263-9-0	0	0	0	0	2,102
N-263-12-1	0	0	693	0	73
N-263-15-0	478	119	14	0	15
N-263-16-0	478	119	14	0	15
N-263-20-0	175	53	20	0	18
N-263-21-0	97	29	11	0	10
N-263-31-0	204	68	9	0	5
N-263-34-1	1,270	1,067	11,600	36	280
N-263-36-0	30	13	5	0	5
N-263-38-1	0	0	863	0	0
N-263-41-0	26	12	5	0	2
N-263-43-0	173	76	29	0	8
N-263-45-0	0	0	0	0	2,403
N-263-46-0	0	0	5,658	0	0
N-263-47-0	31	14	2	0	2
ERC	0	0	0	0	0
Total	2,962	1,570	18,923	36	4,938

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.

Permit #	SSPE2 (lb/yr)				
	NOx	CO	VOC	SOx	PM10
N-263-9-0	0	0	0	0	2,102
N-263-12-1	0	0	693	0	73
N-263-15-0 ¹	0	0	0	0	0
N-263-16-0 ¹	0	0	0	0	0
N-263-20-0	175	53	20	0	18
N-263-21-0	97	29	11	0	10
N-263-31-0	204	68	9	0	5
N-263-34-1	1,270	1,067	11,600	36	280
N-263-36-0	30	13	5	0	5
N-263-38-1	0	0	863	0	0
N-263-41-0	26	12	5	0	2
N-263-43-0	173	76	29	0	8
N-263-45-0	0	0	0	0	2,403
N-263-46-0	0	0	5,658	0	0
N-263-47-0	31	14	2	0	2
N-263-48-0	739	427	49	1	25
N-263-49-0	739	427	49	1	25
ERC	0	0	0	0	0
Total	3,484	2,186	18,993	38	4,958

¹ The permits for these units will be cancelled upon the conversion of the proposed Authorities-to-Construct to Permits to Operate.

5. Major Source Determination

Rule 2201 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	2,962	3,484	20,000	No	No
SO _x	36	38	140,000	No	No
PM ₁₀	4,938	4,958	140,000	No	No
CO	1,570	2,186	200,000	No	No
VOC	18,923	18,993	20,000	No	No

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

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	1.48	No
CO	250	0.785	No
VOC	250	9.46	No
SOx	250	0.018	No
PM	250	2.47	No
PM10	250	2.47	No
CO ₂ e	100,000	758.8 – see below	No

Potential to Emit (CO₂e):

Permit Unit	Description	Rating	Op. Hr. Limit
N-263-15-0	Diesel Em. Engine	1,085 bhp	20 hr
N-263-16-0	Diesel Em. Engine	1,085 bhp	20 hr
N-263-20-0	Diesel Em. Engine	397 bhp	20 hr
N-263-21-0	Diesel Em. Engine	220 bhp	20 hr
N-263-31-0	Diesel Em. Engine	643 bhp	20 hr
N-263-34-1	Nat Gas Heater	1.45 MMBtu/hr	8,760 hr
N-263-41-0	Diesel Em. Engine	90 bhp	20 hr
N-263-43-0	Diesel Em. Engine	380 bhp	30 hr
N-263-47-0	Diesel Em. Engine	97 bhp	50 hr

Engine Use:

$$(3,520 \text{ bhp})(20 \text{ hr/yr}) + (380 \text{ bhp})(30 \text{ hr/yr}) + (97 \text{ bhp})(50 \text{ hr/yr}) \\ = 86,650 \text{ bhp-hr/yr}$$

Heater Use:

$$(1.45 \text{ MMBtu/hr})(8,760 \text{ hr/yr}) = 12,702 \text{ MMBtu/yr}$$

PE_{GHG}:

$$[(86,650 \text{ bhp-hr/yr})(0.0001868 \text{ MT/bhp-hr})(1,000 \text{ kg/MT}) \\ \times (\text{lb}/0.4536 \text{ kg})(\text{ton}/2000 \text{ lb})] + [(12,702 \text{ MMBtu/yr}) \\ \times (52.92 \text{ kg/MMBtu})(\text{lb}/0.4536 \text{ kg})(\text{ton}/2000 \text{ lb})] = 758.8 \text{ tons/yr}$$

6. Baseline Emissions (BE)

The units are new, therefore, their Baseline Emissions are zero.

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. 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 is proposing to install 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 each new engine are compared to the BACT threshold levels in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for each unit (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	354.8	> 2.0	n/a	Yes
SO _x	0.4	> 2.0	n/a	No
PM ₁₀	11.8	> 2.0	n/a	Yes
CO	205.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	1,878	No
VOC	23.7	> 2.0	n/a	Yes

As shown above, BACT will be required for the NO_x, PM₁₀, and VOC emissions from each engine.

2. BACT Guideline

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

3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of

the following steps may be simply cited from the Clearinghouse without further analysis.”

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

NO_x: Tier 2 certified engine.
VOC: Tier 2 certified engine.
PM₁₀: 0.15 g/hp-hr

The following condition will be included on the ATC to ensure compliance with the PM₁₀ BACT emissions limit:

- Emissions from this IC engine shall not exceed 0.15 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

B. Offsets

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

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

As shown in Section VII.C.2, daily emissions for NO_x and CO for each engine are greater than 100 lb/day. Therefore, a notification is required.

- 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 Increase in Permitted Emissions (SSIPE) greater than 20,000 lb/year for any pollutant.

For this project, the proposed engines are the only emissions sources that will generate an increase in Potential to Emit. Since the proposed engine emissions are 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 shown above, this project will require public noticing because the emissions of NO_x and CO from the new units will exceed 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC(s) for this equipment.

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 included on each ATC and PTO to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 4.5 g-NO_x/bhp-hr, 2.6 g-CO/bhp-hr, or 0.3 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.15 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

As shown by the AAQA summary sheet in Appendix D, the proposed equipment will not cause or make worse a violation of an air quality standard for NO_x, CO, PM₁₀, PM_{2.5} or SO_x.

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:

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

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

In the case of a facility that is NOT an existing PSD Major Source, it is necessary to proceed to the second step. 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 ₂	VOC	SO ₂	CO	PM	PM ₁₀	CO _{2e}
Total PE from New and Modified Units	0.74	0.049	0.001	0.43	0.025	0.025	30.7
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	No	No	No	No	No	No	No

EF_{GHG}: 0.0001868 metric tons/bhp-hr (CARB greenhouse gas EF)
 Rating: 1,490 bhp + 1,490 bhp = 2,980 bhp
 Schedule: 50 hr/yr - each

$$PE_{GHG} = (0.0001868 \text{ MT/bhp-hr})(2,980 \text{ bhp})(50 \text{ hr/yr})(2,205 \text{ lb/MT}) \times (\text{ton}/2000 \text{ lb}) = 30.7 \text{ tons/yr}$$

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore, Rule 2410 is not applicable and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

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

The proposed engines are subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

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 proposed engines are subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

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 Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
N-263-48-0	N/A	N/A	1.05/10 ⁶	Yes (for PM10)
N-263-49-0	N/A	N/A	1.05/10 ⁶	Yes (for PM10)

Since the cancer risk for each engine exceeds one in one million, Toxics BACT is required for the PM10 each unit. As shown in the top-down BACT analysis that is appendix D of this document Toxics BACT is a PM10 emission rate not exceeding 0.15 g/bhp-hr.

The following conditions will be listed on each ATC and PTO 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 0.15 g-PM10/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 PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

The new engine has a PM₁₀ emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

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

Rule 4701 Internal Combustion Engines – Phase 1

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

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

Rule 4702 Internal Combustion Engines

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

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.	The following conditions will be included on the PTO: <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]
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	The following condition will be included on each ATC and PTO: This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier.
The owner/operator must monitor the operational characteristics of each engine as recommended by the engine	The following condition will be included on the PTO: <ul style="list-style-type: none"> • {3478} During periods of operation for

<p>manufacturer or emission control system supplier.</p>	<p>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>
<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 PTO:</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 Rules 4701, 4702 and 17 CCR 93115] • The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115] • {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 4701, 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

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

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

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

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

California Health & Safety Code 42301.6 (School Notice)

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

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

The following table demonstrates how the proposed engine(s) will comply with the requirements of Title 17 CCR Section 93115.

<p style="text-align: center;">Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</p>	<p style="text-align: center;">Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</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><u>Unit N-263-48-0 and N-263-49-0:</u></p> <p>NMHC + NOx: 4.8 g/bhp-hr CO: 2.6 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><u>Unit N-263-48-0 and N-263-49-0</u></p> <p>NMHC + NOx: 4.8 g/bhp-hr CO: 2.6 g/bhp-hr PM: 0.15 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> <p style="padding-left: 40px;">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>
<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 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</p>	<p>The following condition will be included on the permits:</p> <p style="padding-left: 40px;">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,</p>

<p>type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>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.</p>
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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

Pending a successful NSR Public Noticing period, issue Authority to Construct permits N-263-48-0 and N-263-49-0 subject to the conditions on the attached draft Authorities to Construct in Appendix A.

The applicant has proposed the flexibility to install engines that are equivalent to those specified in the application. To ensure District concurrence with any engines the applicant may deem equivalent, the following conditions will be included on the Authority-to-Construct permit.

The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] N

The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, fuel usage rates, exhaust stack parameters and operational characteristics/parameters. [District Rule 2010] N

Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] N

No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] N

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
N-263-48-0	3020-10-F	1,490 bhp IC engine	\$749.00
N-263-49-0	3020-10-F	1,490 bhp IC engine	\$749.00

Appendices

- A. Draft ATCs
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheet
- D. HRA and AAQA Summaries
- E. QNEC Calculations

Appendix A Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-263-48-0

LEGAL OWNER OR OPERATOR: DEFENSE DISTRIB DEPOT SAN JOAQUIN-TRACY
MAILING ADDRESS: PO BOX 960001
STOCKTON, CA 95296-0710

LOCATION: 25600 CHRISMAN RD
TRACY, CA 95376

EQUIPMENT DESCRIPTION:

1,490 BHP CUMMINS QST-3-G5-NR2 (OR EQUIVALENT) TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. Permit-to-Operate N-263-15 shall be cancelled at the time this Authority-to-Construct is converted to a Permit-to-Operate. [District Rule 2201]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, fuel usage rates, exhaust stack parameters and operational characteristics/parameters. [District Rule 2010]
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule]
6. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [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-263-48-0 : Jul 10 2013 7:34AM - SCHOINHOM : Joint Inspection NOT Required

7. {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]
8. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
9. {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]
10. 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]
11. 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]
12. Emissions from this IC engine shall not exceed any of the following limits: 4.5 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.3 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
13. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
14. 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]
15. {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]
16. {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]
17. 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]
18. {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]
19. 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]
20. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-263-49-0

LEGAL OWNER OR OPERATOR: DEFENSE DISTRIB DEPOT SAN JOAQUIN-TRACY
MAILING ADDRESS: PO BOX 960001
STOCKTON, CA 95296-0710

LOCATION: 25600 CHRISMAN RD
TRACY, CA 95376

EQUIPMENT DESCRIPTION:

1,490 BHP CUMMINS QST-3-G5-NR2 (OR EQUIVALENT) TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. Permit-to-Operate N-263-16 shall be cancelled at the time this Authority-to-Construct is converted to a Permit-to-Operate. [District Rule 2201]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, fuel usage rates, exhaust stack parameters and operational characteristics/parameters. [District Rule 2010]
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule]
6. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [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-263-49-0 : Jul 10 2013 7:35AM - SCHONHOM : Joint Inspection NOT Required

7. {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]
8. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
9. {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]
10. 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]
11. 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]
12. Emissions from this IC engine shall not exceed any of the following limits: 4.5 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.3 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
13. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
14. 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]
15. {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]
16. {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]
17. 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]
18. {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]
19. 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]
20. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

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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(s)

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_x and VOC Emissions (applies to both units):

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *Latest EPA Tier Certification level for applicable horsepower range*

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

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

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

Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart IIII.

Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)					
Maximum Engine Power	Tier	Model Year(s)	PM	NMHC+NOx	CO
50 ≤ HP < 75 (37 ≤ kW < 56)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	4i	2008+			
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	3	2008+			
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 Part 60 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 engines are rated at 1,490 bhp. Therefore, the applicable control technology option is EPA Tier 2 certification.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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_x and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit, therefore, BACT will be satisfied.

3. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

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

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

Please note Tier 2 or 3 IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM establishes a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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 PM₁₀ is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.

Appendix C
Emissions Data Sheet

Same for each engine

	CUMMINS INC. Columbus, Indiana 47201	Basic Engine Model	Curve No.	G-Drive
		QST30-G5 NR2	FR- 5247	
	EXHAUST EMISSIONS DATA SHEET	Engine Critical Parts List	Date	
		CPL: 41175	20-Jan-06	

Displacement: : 30.48 litre (1860 in ³)	Bore: 140 mm (5.51 in.)	Stroke: 165 mm (6.50 in.)
No of Cylinders: 12	Aspiration: Turbocharged and Low Temperature Aftercooled (2 Pump/2 Loop)	
Emissions Control Device: Turbocharging and Aftercooling		

Engine Speed	Standby Power		Prime Power		Continuous Power	
	RPM	kWm	BHP	kWm	BHP	kWm
1800	1111	1490	1007	1350	832	1115

US EPA/CARB

This engine, tested in accordance with 40CFR89, is in compliance with the US EPA Nonroad Tier 2 regulations:

Component	g/BHP-hr	g/kW-hr
NOx (Oxides of Nitrogen)	4.5	6.0
NOx + HC (Hydrocarbons)	4.8	6.4
CO (Carbon Monoxide)	2.6	3.5
PM (Particulate Matter)	0.15	0.20

This Methods and Conditions:

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specifications:

40 - 48 Cetane Number, 0.03 - 0.05 Wt % Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No.2-D.

Reference Conditions:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 In Hg) Barometric Pressure, 10.7 g/kg (75 grains H₂O/lb) of dry air Humidity (required for NOx correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subject to engine-to-engine variability. Tests conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results.

Data Subject to Change Without Notice.

Appendix D
HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Mark Schonhoff - Permit Services
 From: Kyle Melching - Permit Services
 Date: June 20, 2013
 Facility Name: Defense Depot – Tracy
 Location: 25600 Chrisman Rd., Tracy
 Application #(s): N-263-48-0 & 49-0
 Project #: N-1131649

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Units 48-0 & 49-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A
Chronic Hazard Index	N/A ²	N/A ²	N/A
Maximum Individual Cancer Risk	1.05E-06 ³	2.10E-06	2.30E-06
T-BACT Required?	Yes-PM10		
Special Permit Conditions?	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.
- 3 Cancer risk is for each individual unit.

Proposed Permit Conditions

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

Units 48-0 & 49-0

1. The PM10 emissions rate shall not exceed **0.15 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 June 19, 2013, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two 1,490 bhp emergency diesel IC engines powering electrical generators.

II. Analysis

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

The following parameters were used for the review:

Analysis Parameters Unit 48-0 & 49-0			
Source Type	Point	Location Type	Rural
BHP	1490	PM ₁₀ g/hp-hr	0.15
Closest Receptor (m)	305	Quad	2
Max Hours per Year	50	Type of Closest Receptor	Residence

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, PM₁₀, and PM_{2.5}; as well as the RMR. For Units 48-0 and 49-0, the emission rates used for criteria pollutant modeling were 427 lb/yr CO, 739 lb/yr NO_x, 1 lb/yr SO_x, 25 lb/yr PM₁₀, and 25 lb/yr PM_{2.5}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Units 48-0 & 49-0	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.

The cancer risk associated with the operation of each proposed diesel IC engine is 1.05E-06; which is greater than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for PM₁₀.

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

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

IV. Attachments

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

Appendix E

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 (same for each engine)		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	739	184.75
SO _x	1	0.25
PM ₁₀	25	6.25
CO	427	106.75
VOC	49	12.25