San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

January 20, 2026

Christopher Tuttle
Federal Express Corporation
1000 FedEx Drive
Moon Township, PA 15108

RE: Notice of Final Action - Authority to Construct
Facility Number: N-10026
Project Number: N-1244703

Dear Mr. Tuttle:

The Air Pollution Control Officer has issued the Authority to Construct permit to Federal Express Corporation for the permitting of an existing 1,490 horsepower diesel-fired emergency engine powering an electrical generator located at 6444 Arch Road, Stockton, CA. Enclosed are the Authority to Construct permit and a copy of the notice of final action that has been posted on the District's website (https://valleyair.org/).

Notice of the District's preliminary decision to issue the Authority to Construct permit was posted on October 22, 2025. The District's analysis of the proposal was also sent to CARB on October 23, 2025. All comments received following the District's preliminary decision on this project were considered.

Comments received by the District during the public notice period resulted in minor changes to the project evaluation. Please see public comments and District responses in Appendix F of the attached revised project evaluation. These changes were minor and did not trigger additional public notification requirements, nor did they have any impact upon the Best Available Control Technology determination or on the amount of offsets required for project approval.

Also enclosed is an invoice for the engineering evaluation fees pursuant to District Rule 3010. Please remit the amount owed, along with a copy of the attached invoice, within 60 days.

Samir Sheikh
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

www.valleyair.org www.healthyairliving.com

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Nick Peirce at (209) 557-6400.

Sincerely,

Brian Clements
Director of Permit Services

BC:fjc

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

Facility # N-10026
FEDERAL EXPRESS CORPORATION
1000 FEDEX DR
MOON TOWNSHIP, PA 15108

AUTHORITY TO CONSTRUCT (ATC)

QUICK START GUIDE

1. **Pay Invoice**: Please pay enclosed invoice before due date.
2. **Fully Understand ATC**: Make sure you understand ALL conditions in the ATC prior to construction, modification and/or operation.
3. **Follow ATC**: You must construct, modify and/or operate your equipment as specified on the ATC. Any unspecified changes may require a new ATC.
4. **Notify District**: You must notify the District's Compliance Department, at the telephone numbers below, upon start-up and/or operation under the ATC. Please record the date construction or modification commenced and the date the equipment began operation under the ATC. A startup inspection may be required prior to receiving your Permit to Operate.
5. **Source Test**: Schedule and perform any required source testing. See https://ww2.valleyair.org/compliance/source-testing for source testing resources.
6. **Maintain Records**: Maintain all records required by ATC. Records are reviewed during every inspection (or upon request) and must be retained for at least 5 years. Sample record keeping forms can be found at https://ww2.valleyair.org/compliance/recordkeeping-forms.

By operating in compliance, you are doing your part to improve air quality for all Valley residents.

For assistance, please contact District Compliance staff at any of the telephone numbers listed below.

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Executive Director/Air Pollution Control Officer

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AIR POLLUTION CONTROL DISTRICT

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AUTHORITY TO CONSTRUCT

PERMIT NO: N-10026-3-0 **ISSUANCE DATE:** 1/20/2026

LEGAL OWNER OR OPERATOR: FEDERAL EXPRESS CORPORATION
MAILING ADDRESS: 1000 FEDEX DR
MOON TOWNSHIP, PA 15108

LOCATION: 6444 ARCH ROAD
STOCKTON, CA 95215

EQUIPMENT DESCRIPTION:
1490 BHP CUMMINS MODEL QST30-G5 NR2 DIESEL-FIRED EMERGENCY ENGINE (TIER 2 CERTIFIED) POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. 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. 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. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.95 g-NOx/bhp-hr, 0.66 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.11 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services
N-10026-3-0 : 1/20/2026 12:40:35 PM -- HARADERJ : Joint Inspection NOT Required

9. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. 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 and 17 CCR 93115]
12. 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 and 17 CCR 93115]
13. 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 20 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
15. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

San Joaquin Valley Air Pollution Control District

Authority to Construct -Application Review

Diesel-Fired Emergency Standby IC Engine

Facility Name:	Federal Express Corporation	Date:	October 4, 2025
		Revised:	January 20, 2026
Mailing Address:	1000 FedEx Drive Moon Township, PA 15108	Engineer:	Fred Cruz
		Lead Engineer:	James Harader
Contact Person:	Chris Tuttle (FedEx)	Jack Batho (consultant)	
Telephone:	(412) 859-2384	(402) 536-0694	
E-mail:	environmental@fedex.com	jackiv@fedex.com	
Application No:	N-10026-3-0		
Project No:	N-1244703		
Deemed Complete:	July 22, 2025		

I. Proposal:

Federal Express Corporation submitted an Authority to Construct application to permit an existing 1,490 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

The engine is a 2011 model year Tier 2 unit powering a generator. The entire system is truck-mounted. Federal Express operates the engine as a transportable unit that may be used on-site at the Stockton Facility, or at other Federal Express locations during an emergency. They intend to continue to operate the engine in this manner. The engine joined the Federal Express fleet in 2012, but was not initially located at this site. District Compliance staff first observed the engine to be located at this site in December 2021. The District determined that a Permit to Operate was required upon installation at the site since the engine is kept in a ready state to provide backup power at this Stationary Source, and is operated for testing and maintenance at this site. Therefore, District required the Facility to obtain a Permit to Operate. Since the engine was first observed at the site by District staff in December 2021, the engine was installed sometime prior to that date.

Where equipment is installed prior to permit issuance, it is long-standing District practice, consistent with the structure and intent of District Rule 2201, to determine BACT applicability based on the requirements in effect at the time of installation. At the time the engine was installed at the Stockton facility, the unit met the BACT requirements applicable to emergency IC engines in effect at the time. Consistent with this practice, the District conducted an additional BACT analysis to evaluate whether technologically feasible add-on controls to meet current BACT requirements would be required. As documented in the engineering evaluation (Appendix D), selective catalytic reduction and a diesel particulate filter were evaluated and determined to be not cost effective for this application.

The District received comments during the public notice period for this project. The comments and District responses are included in Appendix F. The comments did not result in any changes to the emission rates for the engine, nor did the comments result in any significant changes to the proposed permit. This revised engineering evaluation reflects the Districts responses to the comments received for the project.

II. Applicable Rules:

Rule 2201 New and Modified Stationary Source Review Rule (4/20/2023)
Rule 2410 Prevention of Significant Deterioration (6/16/2011)
Rule 2520 Federally Mandated Operating Permits (8/15/2019)
Rule 4001 New Source Performance Standards (4/14/1999)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/2004)
Rule 4101 Visible Emissions (2/17/2005)
Rule 4102 Nuisance (12/17/1992)
Rule 4201 Particulate Matter Concentration (12/17/1992)
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/2003)
Rule 4702 Internal Combustion Engines (8/19/2021)
Rule 4801 Sulfur Compounds (12/17/1992)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
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

II. Project Location:

The equipment will be located at 6444 Arch Road, Stockton, CA.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 does not apply to this project.

IV. Process Description:

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 20 hours per year for maintenance and testing purposes.

V. Equipment Listing:

N-10026-3-0: 1,490 BHP (INTERMITTENT) CUMMINS MODEL QST30-G5 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The applicant has proposed to permit an existing Tier 2 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel.

Therefore, the engine meets the Tier 2 ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

The use of CARB certified 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:	20 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)
Conversion factor:	1.34 bhp/kw

B. Emission Factors:

Emission Factors			
Pollutant	**Emission Factor (g/bhp-hr)**	**Emission Factor (g/kw-hr)**	**Source**
NO_X	3.95	5.25	Engine Manufacturer
SO_X	0.0051	0.0068	Mass Balance Equation Below
PM_{10}	0.11	0.15	Engine Manufacturer
CO	0.66	0.88	Engine Manufacturer
VOC	0.07	0.09	Engine Manufacturer

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

C. Calculations:

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 will equal 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

The daily and annual PE2 are calculated as follows:

Daily PE2 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE2 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

Post Project Emissions (PE2)						
Pollutant	**Emissions Factor (g/bhp-hr)**	**Rating (bhp)**	**Daily Hours of Operation (hrs/day)**	**Annual Hours of Operation (hrs/year)**	**Daily PE2 Including emergency use (lb/day)**	**Annual PE2 Maintenance and Testing (lb/yr)**
NO_x	3.95	1490	24	20	**311.4**	**260**
SO_x	0.0051	1490	24	20	**0.4**	**0**
PM_{10}	0.11	1490	24	20	**8.7**	**7**
CO	0.66	1490	24	20	**52.0**	**43**
VOC	0.07	1490	24	20	**5.5**	**5**

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATCs) or Permits to Operate (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 (AER) that have occurred at the source, and which have not been used on-site. SSPE1 is summarized in the following table and is from project N-1211956 N-10026-1-0, unless otherwise noted.

SSPE1 (lb/year)					
	NO_X	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	204	0	6	50	11

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

Pursuant to District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the 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 ERCs which have been banked since September 19, 1991 for AER 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 permitting of this existing emergency standby IC engine.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	204	0	6	50	11
N-10026-3-0	260	0	7	4	5
SSPE2	**464**	**0**	**13**	**54**	**16**

5. Major Source Determination:

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	204	0	6	6	50	11
SSPE2	464	0	13	13	54	16
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

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

Rule 2410 Major Source Determination:

The facility is not an existing Major Source for PSD for at least one pollutant. Therefore, the facility is not an existing Major Source for PSD.

6. Baseline Emissions (BE):

BE will equal the 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 will equal the Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201. Since this is a new emissions unit, BE will equal PE1 equals zero for all 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."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification:

District Rule 2201 states that a Federal Major Modification is the same as a “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.

9. Rule 2410 - Prevention of Significant Deterioration (PSD) Applicability Determination

The project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore, Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District’s PAS emissions profile screen. Detailed QNEC calculations are included in Appendix C.

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[1]:

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.

As discussed in Section I, the facility is proposing to permit an existing diesel-fired emergency standby IC engine. 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 this engine are compared to the BACT threshold levels in the following table:

New Emissions Unit BACT Applicability				
Pollutant	**Daily Emissions for the new unit (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
NO_X	311.4	> 2.0	N/A	Yes
SO_X	0.4	> 2.0	N/A	No
PM_{10}	8.7	> 2.0	N/A	Yes
CO	52.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	54	No
VOC	5.5	> 2.0	N/A	Yes

As shown above, BACT will be triggered for NO_X, PM_{10}, and VOC emissions from the engine for this project.

[1] 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.

2. BACT Guideline:

BACT Guideline 3.1.1 (dated 4/13/2019) which appears in Appendix D of this report, covers diesel-fired emergency IC engines and was the BACT Guideline in effect at the time of installation of this engine in 2021.

3. Top Down BACT Analysis:

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

Pursuant to the attached top down BACT Analysis, which appears in Appendix D of this report, BACT is satisfied with:

NO_X: Latest Available Tier Certification level for applicable horsepower
VOC: Latest Available Tier Certification level for applicable horsepower
PM_{10}: 0.15 g/bhp-hr

District practice is to consider BACT at the time of installation, which in this case is 2021. In 2021, the latest available Tier Certification level for an engine with this HP rating was Tier 2. Therefore, the engine met BACT at the time of installation. Furthermore, the District conducted an additional BACT Analysis to determine whether add-on controls would be required to bring emissions to current standards. The District's analysis determined that neither an add-on selective catalytic reduction system nor a diesel particulate filter were cost effective; therefore, add-on controls were not required for this installation.

B. Offsets:

1. Offset Applicability:

Pursuant to Section 4.6.2 of this rule, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable to this project.

However, even when there is an applicable exemption, the SSPE2 values are compared to the offset threshold to determine if offsets are triggered. In its PAS database, the District keeps track of facilities where offsets are triggered but an exemption applies. The SSPE2 values are compared to the offset trigger thresholds in the following table:

Offset Determination (lb/year)					
	NOx	**SOx**	**PM_{10}**	**CO**	**VOC**
SSPE2	464	0	13	54	16
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

2. Quantity of Offsets Required:

As shown above, no offset thresholds are exceeded with this project. Further, as previously stated, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

C. Public Notification:

1. Applicability:

Public noticing is required for:

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

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility does not become a new Major Source, is not an SB 288 Major Modification, and is 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 NOx are greater than 100 lb/day.

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

SSPE1 and SSPE2 are compared to the offset thresholds below.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	204	464	20,000 lb/year	No
SO_X	0	0	54,750 lb/year	No
PM_{10}	7	13	29,200 lb/year	No
CO	50	54	200,000 lb/year	No
VOC	5	16	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

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

e. Any project which results in a Title V significant permit modification:

Since this facility does not have a Title V operating permit, this project is not a Title V significant modification, and therefore public noticing is not required.

2. Public Notice Action:

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits:

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC as a way to ensure compliance:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 3.95 g-NOx/bhp-hr, 0.66 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed 0.11 g-PM_{10}/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {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]

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 District Rule 2201.

2. Monitoring:

Monitoring is not required to demonstrate compliance with District 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:

Reporting is not required to ensure compliance with District 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 D 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 PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. 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 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.

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 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.

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 as a mechanism 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 as a mechanism 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* 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.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
3-0	16.17	N/A[1]	0.00	4.54E-08	No	Yes
Project Totals	16.17	N/A[1]	0.00	4.54E-08		
Facility Totals	>1	0.00	0.00	2.27E-07		

1. Acute hazard indices were not calculated for Unit 3 since there is no risk factor is so low that it has been determined to be insignificant for this type of unit.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

Therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the Technical Services Memo in Appendix D of this report, the emissions increase for this project were determined to be less than significant.

The following conditions will be listed on the ATC as a mechanism to ensure compliance with the RMR:

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

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

Rule 4201 Particulate Matter Concentration

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

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

The new engine has a PM_{10} emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {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 is 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 for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 3.0 of District Rule 4702 as follows:

> *3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the*

following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

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 permit:

- {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 and 17 CCR 93115]

- {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 and 17 CCR 93115]

Operation of emergency standby engines are limited to 100 hours or less per calendar year for non-emergency purposes by District Rule 4702. The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine's maintenance and testing to 20 hours/year; therefore, compliance is expected. The following condition will be included on the permit:

- 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 20 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:
4.2.1 An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a non-resettable elapsed operating time meter. In lieu of a non-resettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.4 Install and operate a non-resettable elapsed operating time meter. In lieu of installing a non-resettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {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]

Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {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]

Install and operate a non-resettable elapsed time meter. In lieu of installing a non-resettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by Permit-to-Operate condition. The operator shall properly maintain and operate the non-resettable elapsed time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included on the permit:

- {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]

The exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

> *6.2.3 An owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:*
>
> > *6.2.3.1 Total hours of operation,*
> > *6.2.3.2 The type of fuel used,*
> > *6.2.3.3 The purpose for operating the engine,*
> > *6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and*
> > *6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.*

Records of the total hours of operation, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and other support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The following conditions will be included on the permit:

- {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 SO_2) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO_2 = (n x R x T) ÷ P
n = moles SO_2
T (standard temperature) = 60 °F or 520 °R
R (universal gas constant) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$

$$\frac{0.000015\ lb-S}{lb-fuel}\times\frac{7.1\text{ lb}}{\text{gal}}\times\frac{64\text{ lb}-SO_2}{32\text{ lb}-S}\times\frac{1\text{ MMBtu}}{9{,}051\text{ scf}}\times\frac{1\text{ gal}}{0.137\text{ MMBtu}}\times\frac{\text{lb}-\text{mol}}{64\text{ lb}-SO_2}\times\frac{10.73\text{ psi}-\text{ft}^3}{\text{lb}-\text{mol}-{}^\circ\text{R}}\times\frac{520{}^\circ\text{R}}{14.7\text{ psi}}\times 1{,}000{,}000 = \quad 1.0\text{ ppmv}$$

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 as a mechanism 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 engine 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 requirements apply to new engines (those installed after 1/1/05):

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, is included on the permit. • {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]

The engine(s) must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.	The applicant has proposed the use of an engine that is certified to the latest EPA Tier Certification standards for the applicable horsepower range, guaranteeing compliance with the emission standards of the ATCM. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions are ≤ 0.01 g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine are certified at 0.11 g/bhp-hr, therefore the engine is allowed 20 hours.	The following conditions will be included on the permit: • {4772} Emissions from this IC engine shall not exceed 0.11 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115] • {4920} 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, 4102, and 4702, and 17 CCR 93115]
Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM.	The following condition will be included on the permit: The District has verified that this engine is not located within 500' of a school.
A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 93115.8(a) unless the District determines on a case-by-case basis 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.	The following condition will be included on the permit: • {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]

An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.	The following condition will be included on the permit: • {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]

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.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's

potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation:

Pending a successful New Source Review (NSR) public noticing period, issue Authority to Construct N-10026-3-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information:

Billing Schedule			
Permit Number	**Fee Schedule**	**Fee Description**	**Fee Amount**
N-10026-3-0	3020-10-F	1,490 bhp IC engine	$972

Appendices:

A. Draft ATC N-10026-3-0
B. Emissions Data Sheet and/or ARB/EPA Certification
C. QNEC Calculations
D. BACT Guideline and BACT Analysis
E. RMR and AAQA
F. Public Notice Comments and District Responses

Appendix A

Draft ATC N-10026-3-0

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-10026-3-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: FEDERAL EXPRESS CORPORATION
MAILING ADDRESS: 1000 FEDEX DR
MOON TOWNSHIP, PA 15108

LOCATION: 6444 ARCH ROAD
STOCKTON, CA 95215

EQUIPMENT DESCRIPTION:
1490 BHP CUMMINS MODEL QST30-G5 NR2 DIESEL-FIRED EMERGENCY ENGINE (TIER 2 CERTIFIED) POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.95 g-NOx/bhp-hr, 0.66 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.11 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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.

Samir Sheikh, Executive Director / APCO

DRAFT

Brian Clements, Director of Permit Services
N-10026-3-0 : 10/22/2025 8:48:07 AM -- HARADERJ : Joint Inspection NOT Required

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 and 17 CCR 93115]
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 and 17 CCR 93115]
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 20 hours per calendar year. [District Rules 2201, 4102, 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]

Appendix B

Emissions Data Sheet and EPA Certification

Power Generation

Exhaust Emission Data Sheet
1000DQFAD
60 Hz Diesel Generator Set

Engine Information:

Model:	Cummins Inc. QST30-G5 NR2	Bore:	5.51 in. (139 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Stroke:	6.5 in. (165 mm)
Aspiration:	Turbocharged and Low Temperature aftercooled	Displacement:	1860 cu. in. (30.4 liters)
Compression Ratio:	14.7:1		
Emission Control Device:	Aftercooled (Air-to-Air) or Low Temperature Aftercooled		

	1/4	1/2	3/4	Full	Full	
PERFORMANCE DATA	**Standby**	**Standby**	**Standby**	**Standby**	**Prime**	
BHP @ 1800 RPM (60 Hz)	371	741	1112	1482	1322	
Fuel Consumption (gal/Hr)	19.1	35.8	54.1	72.2	63.9	
Exhaust Gas Flow (CFM)	2780	4500	6370	7540	6950	
Exhaust Gas Temperature (°F)	620	760	814	890	873	
EXHAUST EMISSION DATA						
HC (Total Unburned Hydrocarbons)	0.12	0.10	0.08	0.07	0.08	
NOx (Oxides of Nitrogen as NO2)	4.17	5.20	3.87	3.95	4.00	
CO (carbon Monoxide)	0.66	0.36	0.48	0.66	0.58	
PM (Particular Matter)	0.19	0.15	0.12	0.11	0.11	
SO2 (Sulfur Dioxide)	0.11	0.10	0.10	0.11	0.10	
Smoke (Bosch)	0.88	0.80	0.79	0.73	0.75	

All Values are Grams/HP-Hour, Smoke is Bosch #

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (±2%). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel Temperature:	99 ± 9 °F (at fuel pump inlet)
Intake Air Temperature:	77 ± 9 °F
Barometric Pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference Standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

Appendix C
QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, 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:

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

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO_X	260	65.0
SO_X	0	0.0
PM_{10}	7	1.8
CO	52	13.0
VOC	5	1.3

Appendix D

BACT Guideline and BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1*

Last Update: 06/13/2019

Emergency Diesel-Fired IC Engine

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

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

Top Down BACT Analysis for the Emergency IC Engine

BACT at the Time of Installation

The engine proposed in this project was installed in 2021. Pursuant to District practice regarding equipment that was installed without an accurate ATC permit, if the equipment was installed with BACT (i.e. Achieved-in-Practice BACT at the time of installation), or if BACT did not exist 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 controls).

Since this engine was installed in 2021, it was subject to BACT guideline 3.1.1 Emergency Diesel IC Engine, (6/13/2019). A copy of this guideline is attached in this document above. As shown on the guideline, BACT for this engine at the time of installation was:

NO_x: Latest EPA Tier Certification level for applicable horsepower range

PM_{10}: 0.15 g/bhp-hr or Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent (ATCM)

VOC: Latest EPA Tier Certification level for applicable horsepower range

The engine is a Tier 2 certified unit. At the time this engine was installed (2021), the District had made a determination that Tier 4F certified engines were not readily available for this size and class and category of source. Tier 4F certified engines were not required until the 4/29/2022 update to District BACT Guideline 3.1.1. Thus, at the time of installation, Tier 2 was the latest available certification standard for the proposed 1,490 bhp engine. The engine met BACT requirements for NOx, PM_{10} and VOC at the time of installation; therefore, the current BACT analysis will be limited to the types of controls that can be applied to the engine that has already been installed (i.e. add-on controls) to bring the engine up to current standards.

1. **BACT Analysis for NOx Emissions:**

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- NO_x: Latest EPA Tier Certification level for applicable horsepower range

No technologically feasible controls or alternate basic equipment are identified in the BACT guideline listed above.

As discussed earlier, the engine met BACT requirements at the time of installation. The following analysis will determine whether add-on controls may be required (if cost effective) to further reduce NOx emissions to the current BACT emission levels of 2025. The current latest applicable Tier certification level is Tier 4F, with an emission standard of 0.5 g-NO_x/bhp-hr.[2] Since the proposed engine has an emission rate of 3.86 g-NO_x/bhp-hr, it would need to be retrofitted with an add-control device in order to meet the current latest tier certification standard. The installation of a selective catalytic reduction (SCR) system has been identified as an add-on control device that would lower NOx emission from the proposed engines to the Tier 4F emission levels:

- Selective Catalytic Reduction (SCR)

SCR decreases NOx emissions by using a catalyst and the injection of a reductant such as ammonia or urea to convert NOx into water and nitrogen. This is accomplished when the catalyst lowers the temperature of the reaction that is needed to convert NOx into water and nitrogen. Once the engine exhaust heats up to at least 260 ^oC, the catalyst activates and the reductant is added into the exhaust stream. The aforementioned chemical reaction then takes place which reduces the NOx emissions by approximately 95%.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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

[2] https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart

d. Step 4 - Cost Effectiveness Analysis

(A). Emission Reduction:

Based on the NOx potential emissions calculated in Section VII.C.2 of this evaluation and assuming a NOx conversion efficiency of 95%, the amount of NOx emissions reduction is calculated below:

NOx Emission Reductions = Annual PE_{NOx} × 1 tons/2,000 lb × Overall Control Eff.
= 260 lb/year × 1 tons/2,000 lb × 0.95
= **0.12 ton/year**

(B). Total Capital Cost Investment (TCI)

The District has acquired the following Cost Data from manufacturers.

Manufacturer	Engine Rating (bhp)	Equipment Cost ($)	System type
NETT Technologies	750	75K - 100K	SCR and DPF
Johnson Matthey	1,000	138k - 148k	SCR and DPF
Miratech	1000	150k to 200k	SCR and DPF

The cost data provided by manufacturers are for SCR and Diesel Particulate Filter (DPF) system. For this cost analysis, we require the cost of the SCR alone. ARB's 2010 article titled "Analysis of the Technical Feasibility and Costs of After-Treatment Controls on New Emergency Standby Engines"[3], states the average capital cost of installing an SCR system on an engine is $80/bhp. The average cost of an SCR and DPF system is around $118/bhp. We will use these values to calculate an estimated percentage of the total cost that could be attributed to the SCR system ($SCR_{percentage}$).

3 https://ww2.arb.ca.gov/sites/default/files/classic/regact/2010/atcm2010/atcmappb.pdf

$SCR_{Percentage}$ = SCR system Cost ($/bhp) / SCR and DPF System ($/bhp)

= $80/bhp / $118/bhp

= 67.8%

The manufacturers provided the cost estimates in ranges. As a conservative estimate, we will determine the SCR cost at the low end of the range using the following calculation:

SCR $Cost_{low\text{-}end}$ ($) = SCR and DPF Cost ($) x $SCR_{percentage}$

Additionally we will calculate the SCR $Cost_{low\text{-}end}$ per bhp by using the following equation:

SCR $Cost_{low\text{-}end}$ ($/bhp) = SCR $Cost_{low\text{-}end}$ ($) / Engine Rating (bhp)

Manufacturer	Engine Rating (bhp)	SCR and DPF Cost ($)	SCR $Cost_{Low\text{-}End}$ ($)	SCR $Cost_{Low\text{-}End}$ ($/bhp)
NETT Technologies	750	75K - 100K	$50,850	68
Johnson Matthey	1,000	138k - 148k	$93,564	94
Miratech	1000	150k to 200k	$101,700	102

Using the SCR $Cost_{Low\text{-}End}$ we will calculate the average cost by using the following equation:

SCR $Cost_{average}$ = (NETT Technologies SCR $Cost_{Low\text{-}End}$ + Johnson Matthey SCR $Cost_{Low\text{-}End}$ + Miratech SCR $Cost_{Low\text{-}End}$) / (number of Manufacturers)

= ($68/bhp + $94/bhp + $102/bhp) / 3

= $88/bhp

Thus:

Capital Cost of SCR per engine = Cost/hp x BHP rating

= $88/hp x 1,490 bhp

= $131,120

This average capital cost does not include the cost of installation, which according to the SCR manufacturers could increase capital cost by 25% to over 100%. To be conservative, the District will assume a minimum 25% SCR installation cost.

Cost of Installation per engine = SCR Cost x 25% = $97,856 x 0.25 = $24,464

Capital Investment per engine = SCR Cost + Cost of Installation
= $131,120 + $32,780
= $163,900

Annualized Capital Costs

Annualized Capital Investment = Total Capital Investment x Amortization Factor

Amortization Factor = $\frac{0.06(1.06)^{10}}{(1.06)^{10}-1}$ = 0.1295 per District policy, amortizing over 10 years at 5%

Therefore, Annualized Capital Investment = $163,900 x 0.1359 **= $22,274**

(C). Cost Effectiveness of a SCR with 95% Control

Cost Effectiveness = Annualized Capital Costs ($/year) ÷ Emission Reduction (ton-NOx/year)
= $22,274/year ÷ 0.12 ton-NOx/year
= $185,617 /ton-NOx

As shown above, the capital cost of SCR system with 95% capture efficiency is $185,617 per ton, which is greater than the District's NOx cost-effectiveness threshold of $37,800/ton. Therefore, the NOx control option is not cost effective and is being removed from consideration for this project.

e. Step 5 - Select BACT

As discussed above, add-on controls to bring NOx emissions to the level required by the current emission standards were not cost effective. The engine met BACT requirements at the time of installation, which was the Tier 2 certification level. Thus, the engine is determined to meet BACT requirements.

2. BACT Analysis for PM_{10} Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

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

No technologically feasible controls or alternate basic equipment are identified in the BACT guideline listed above.

The proposed Tier 2 IC engine has a PM emission factor of 0.07 g-PM/hp-hr and met BACT requirement at the time of installation. The following analysis will determine whether add-on controls may be required (if cost effective) to further reduce engine emissions to the current standard for PM10, which would be 0.02 g-PM/bhp-hr (Tier 4F) in 2025. Therefore, the engine would need to be retrofitted with an add-on control device in order to meet the current Tier 4F emission limit of 0.02 lb-PM/bhp-hr. The installation of a diesel particulate filter (DPF) has been identified as an add-on control device that would lower PM10 emission from the proposed engine to the Tier 4F emission levels:

- Installing a diesel particulate filter (DPF) to the diesel exhaust system

The DPF's primary function is to decrease the level of PM_{10} emissions produced by an engine. This is accomplished through the use of the DPF's porous filter which allows gases to pass through while capturing solid materials. DPFs can lower PM10 emissions from engines by 85%.

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

(A). Emission Reduction:

Based on the above determined project emissions and assuming a PM_{10} conversion efficiency of 85% the amount of PM_{10} emissions reduced is calculated below.

PM_{10} Emission Reductions = Annual PE_{PM10} × 1 tons/2,000 lb × Overall Control Eff.
= 7 lb/year × 1 tons/2,000 lb × 0.85
= **0.003 ton/year**

(B). Total Capital Cost Investment (TCI)

The District has acquired the following Cost Data from manufacturers.

Manufacturer	Engine Rating (bhp)	Equipment Cost ($)	System type
NETT Technologies	750	75K - 100K	SCR and DPF
Johnson Matthey	1,000	138k - 148k	SCR and DPF
Miratech	1000	150k to 200k	SCR and DPF

The cost data provided by manufacturers are for SCR and Diesel Particulate Filter (DPF) system. For this cost analysis, we require the cost of the DPF alone. ARB's 2010 article titled "Analysis of the Technical Feasibility and Costs of After-Treatment Controls on New Emergency Standby Engines"[4], states the average capital cost of installing an SCR system on an engine is $80/bhp. The average cost of an SCR and DPF system is around $118/bhp. As calculated in the BACT Analysis for NO_x, The estimated percentage of the total cost that could be attributed to the SCR system ($SCR_{percentage}$) is 67.8%. Thus, we will calculate the DPF percentage as follows:

$DPF_{Percentage}$= $SCR_{percentage}$ – 100%

= 67.8% - 100%

= 32.2%

The manufacturers provided the cost estimates in ranges. As a conservative estimate, we will determine the DPF cost at the low end of the range using the following calculation:

4 https://ww2.arb.ca.gov/sites/default/files/classic/regact/2010/atcm2010/atcmappb.pdf

$DPF\ Cost_{low\text{-}end}$ ($) = SCR and DPF Cost ($) x $DPF_{percentage}$

Additionally we will calculate the $DPF\ Cost_{low\text{-}end}$ per bhp by using the following equation:

$DPF\ Cost_{low\text{-}end}$ ($/bhp) = $DPF\ Cost_{low\text{-}end}$ ($) / Engine Rating (bhp)

Manufacturer	Engine Rating (bhp)	SCR and DPF Cost ($)	$DPF\ Cost_{Low\text{-}End}$ ($)	$DPF\ Cost_{Low\text{-}End}$ ($/bhp)
NETT Technologies	750	75K - 100K	$24,150	32
Johnson Matthey	1,000	138k - 148k	$44,436	44
Miratech	1000	150k to 200k	$48,300	48

Using the $DPF\ Cost_{Low\text{-}End}$ we will calculate the average cost by using the following equation:

$DPF\ Cost_{average}$ = (NETT Technologies $DPF\ Cost_{Low\text{-}End}$ + Johnson Matthey $DPF\ Cost_{Low\text{-}End}$ + Miratech $DPF\ Cost_{Low\text{-}End}$) / (number of Manufacturers)

= ($32/bhp + $44/bhp + $48/bhp) / 3

= $41/bhp

Thus:

Capital Cost of DPF per engine = Cost/hp x BHP rating

= $41/hp x 1,490 bhp

= $61,090

This average capital cost does not include the cost of installation, which according to the manufacturers could increase capital cost by 25% to over 100%. To be conservative, the District will assume a minimum 25% DPF installation cost.

Cost of Installation per engine = DPF Cost x 25% = $61,090 x 0.25 = $15,273

Capital Investment per engine = DPF Cost + Cost of Installation
= $61,090 + $15,273
= $76,363

Annualized Capital Costs

Annualized Capital Investment = Total Capital Investment x Amortization Factor

Amortization Factor = $\frac{0.05(1.05)^{10}}{(1.05)^{10}-1}$ = 0.1295 per District policy, amortizing over 10 years at 5%

Therefore, Annualized Capital Investment = $76,363 x 0.1359 **= $10,378**

(C). Cost Effectiveness of a DPF with 85% Control

Cost Effectiveness = Annualized Capital Costs ($/year) ÷ Emission Reduction (ton-PM_{10}/year)
= $10,378/year ÷ 0.003 ton-$PM_{10}$/year
= $3,459,333/ton-$PM_{10}$

As shown above, the capital cost of DPF system with 85% capture efficiency is $3,459,333 per ton, which is greater than the District's PM_{10} cost-effectiveness threshold of $13,700/ton. Therefore, the PM_{10} control option is not cost effective and is being removed from consideration for this project.

e. Step 5 - Select BACT

As discussed above, add-on controls to bring PM10 emissions to the level required by the current emission standards were not cost effective. The engine met BACT requirements for PM10 at the time of installation, which was the Tier 2 certification level. Thus, the engine is determined to meet BACT requirements.

3. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- Latest EPA Tier certification level for applicable horsepower range (Achieved in Practice)

No technologically feasible controls or alternate basic equipment are identified in the BACT guideline listed above.

The engine met BACT at the time of installation through the use of a Tier 2 certified IC engine. Furthermore, the certified emission levels for the engine for VOC would also meet the current latest Tier 4F standard emission levels. Therefore, no add-on controls would be required to

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 identified in Step 1.

d. Step 4 - Cost Effectiveness Analysis

A cost analysis is not required since the engines VOC emission level meets the latest standard, which is the most effective control option.

e. Step 5 - Select BACT

BACT for VOC emissions from these emergency standby diesel IC engines is the latest EPA Tier Certification level, which was Tier 2 at the time of installation for the applicable horsepower range. As discussed above, retrofitting the engines with an add-on control device (DOC) to meet the current applicable Tier certification (Tier 4F) is not necessary, since the engine emissions are already below the Tier 4F standard.

Appendix E

Technical Services Memo and AAQA

Facility Name:	FEDERAL EXPRESS CORPORATION
Location:	6444 ARCH ROAD, STOCKTON
Application #(s):	N-10026-3-0
Project #:	N-1244703

Summary

Risk Management Review (RMR):

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
3-0	16.17	N/A[1]	0.00	4.54E-08	No	Yes
Project Totals	16.17	N/A[1]	0.00	4.54E-08		
Facility Totals	>1	0.00	0.00	2.27E-07		

Notes:
1. Acute hazard indices were not calculated for Unit 3 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Ambient Air Quality Analysis (AAQA):

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	N/A		N/A		
NO_x	N/A				Pass
SO_x	N/A			N/A	Pass
PM_{10}				N/A	Pass
$PM_{2.5}$				N/A	Pass
Ozone	N/A		N/A		

Notes:
1. Results were taken from the attached AAQA Report.
2. The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.
3. Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 1 $\mu g/m^3$ for the annual concentration.
4. Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 0.13 $\mu g/m^3$ for the annual concentration.

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 3-0

1. The PM_{10} emissions rate shall not exceed 0.11 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.
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.

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 20 hours per calendar year.

Project Description

Technical Services received a request to perform a Risk Management Review (RMR) for the following:

- Unit -3-0: 1490 BHP CUMMINS MODEL QST30-G5 NR2 DIESEL-FIRED EMERGENCY ENGINE (TIER 2 CERTIFIED) POWERING AN ELECTRICAL GENERATOR

RMR Report

Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the units', the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in a million for carcinogenic impacts (cancer risk) and less than 1.0 for the acute and chronic hazard indices (non-carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For units that exceed a cancer risk of one in a million, Toxic Best Available Control Technology (TBACT) must be implemented.

Air toxics emissions for this project were calculated using the following methods:

- Particulate matter (PM_{10}) emissions for the proposed diesel internal combustion engine were provided by the Permit Engineer. Per OEHHA guidance, all diesel exhaust PM_{10} is evaluated as diesel particulate matter (CAS# 9901).

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2018-2022 from Stockton (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling

and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	**Process ID**	**Process Material**	**Process Units**	**Hourly Process Rate**	**Annual Process Rate**
3-0	1	Diesel PM10	Lbs	0.36	7

Point Source Parameters						
Unit ID	**Unit Description**	**Release Height (m)**	**Temp. (°K)**	**Exit Velocity (m/sec)**	**Stack Diameter (m)**	**Vertical/ Horizontal/ Capped**
3-0	1490 BHP DICE	3.05	750	90.65	0.25	Vertical

AAQA Report:

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO_2 standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	**Station Name**	**County**	**City**	**Measurement Year**
CO	Stockton - University Park	San Joaquin	Stockton	2023
NOx	Stockton - University Park	San Joaquin	Stockton	2023
PM10	Stockton - University Park	San Joaquin	Stockton	2023
PM2.5	Stockton - University Park	San Joaquin	Stockton	2023
SOx	Fresno - Garland	Fresno	Fresno	2023

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit Id	**Process**	**NOx**	**SOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
3-0	1	12.97[1]	0.02[1]	2.17[1]	0.36[1]	0.36[1]

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

Emission Rates (lbs/year)						
Unit Id	**Process**	**NOx**	**SOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
3-0	1	260	0	4	7	7

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 18-22 from Stockton (rural dispersion coefficient selected) were used for the analysis. The following parameters were used for the review:

Point Source Parameters						
Unit Id	**Unit Description**	**Release Height (m)**	**Temp. (°K)**	**Exit Velocity (m/sec)**	**Stack Diameter (m)**	**Vertical/ Horizontal/ Capped**
3-0	1490 BHP DICE	3.05	750	90.65	0.25	Vertical

Conclusion

RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this project 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).**

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

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

Attachments

A. Modeling request from the project engineer

B. Additional information from the applicant/project engineer

C. Prioritization score w/ toxic emissions summary

D. Facility Summary

Appendix F

Public Notice Comments and District Responses

Comment #1 from CCEJN:

We would like the District to provide the facility submitted documents within the proposed permit action that show the subject IC engine was installed on site in 2012.
However, we believe this will be difficult as construction of the building in question occurred sometime between 2018 and 2020, per Google Earth images.

So, we would like the District to explain how they determined the engine was installed at the permitted stationary source in 2012 and therefore only has to comply with 2012 BACT requirements.

District Response to Comment #1:

The District appreciates the commenter's request for clarification regarding the installation date of the subject internal combustion (IC) engine and the applicable Best Available Control Technology (BACT) requirements.

The engine associated with this project is a 2012 model year engine. District Compliance staff first observed the engine at the Stockton Federal Express facility during a December 2021 site inspection. At that time, the inspector noted that the engine was owned by Federal Express and had been in the company's fleet since 2012. This information initially led to the conclusion that the engine had been installed at the Stockton facility in 2012.

Subsequent clarification provided by the applicant indicates that while the engine is a 2012 model year unit, it was originally deployed elsewhere within the Federal Express fleet prior to being relocated to the Stockton facility. Based on District inspection records, the engine was installed at the Stockton facility prior to December 2021, regardless of the construction date of the current building. The engineering evaluation has been updated to reflect this clarification and to provide additional context regarding the operational history and installation timing of the engine at this site.

For purposes of determining applicable BACT, the relevant date is the date of installation at the stationary source, which occurred prior to December 2021. At the time on installation, District BACT requirements for emergency IC engines of this size and class required the use of a Tier 2 certified IC engine, consistent with District BACT Guideline 3.1.1 (June 13, 2019). Tier 4 Final (Tier 4F) engines were not identified as achieved in practice for this size and class of source until the April 29, 2022 update to District BACT Guideline 3.1.1. Accordingly, the District correctly applied the BACT requirements in effect at the time the engine was installed at the Stockton facility.

Comment #2 from CCEJN:

We also do not believe the Federal Express Corporation did not know ATC permits were not required. FedEx has 4 SJV permits and Federal Express Corporation also has 4 SJV permits with a 324 hp emergency engine already permitted at the facility in question. We also know that since Federal Express Corporation went through the PERP process, they are aware their

PERP does not allow them to operate their engine at the FedEx building. We believe the District is aware of and knows this also, meaning the District is choosing to help the facility illegally permit this engine.

District Response to Comment #2 from CCEJN:

The facility only has one permitted IC engine located at the specific facility in question (Permit No. N-10026-1-0), and that engine is a stationary unit. The engine associated with this project is a transportable, trailer-mounted emergency generator that was installed at the Stockton facility sometime prior to December 2021. This transportable engine is designed to be deployed to Federal Express facilities experiencing extended power outages to maintain operations and may be operated at multiple locations, including the Stockton facility where it is stored.

The regulatory framework governing portable emergency IC engines powering generators is more nuanced than suggested by the comment. The commenter's statement that engines operating under the Portable Equipment Registration Program (PERP) categorically may not operate at a stationary source is not accurate. California Code of Regulations, Title 13, section 2453 (m)(4)(E), provides specific circumstances under which portably registered emergency generators may be operated at a stationary source.

Historically, the District required permits for emergency generators operating at stationary sources regardless of whether the engine was registered under PERP. However, District Rule 2020 was amended on December 18, 2014, to exempt portably registered emission units powering generators from the requirement to obtain an Authority to Construct or Permit to Operate, provided the units meet the criteria in District Rule 2201, Section 6.16.2.1. Accordingly, it is not always the case that a portably registered emergency generator must obtain a District permit before operating at a stationary source.

In this case, the District determined that a Permit was Operate was required due to the manner in which the engine is installed and operated at the Stockton facility. Specifically, the unit is stored at the facility in a ready-to-operate condition, is operated at the facility for maintenance and testing purposes, and may be operated at the facility during emergency power outages. Based on these facts, the District required the facility to apply for a permit for operation at this site.

The District's actions are consistent with applicable regulatory requirements and longstanding District policy and do not constitute approval of unlawful operation.

Comment #3 from CCEJN:

The Notice of Preliminary Decision for the subject ATC says the analysis posted is the regulatory basis for this proposed action. Appendix E is the Technical Services Memo and AAQA that is intended to show the permitted operation is within allowable health risks and show the AAQA analysis. However, this appendix lists 4 attachments that are not included: (A) Modeling Request, (B) Additional Information, (C) Prioritization score w/ toxic emissions

summary, and (D) Facility Summary. Without these attachments being included, the basis for this risk assessment is unknown and members of the public are unaware of the specific toxics emitted by this operation or the associated health risks the District is using in its decision

We believe these documents must be included in the public notice in order for the District to uphold its public notice requirements.

District Response to Comment #3:

The District respectfully disagrees with the assertion that the absence of certain internal attachments from the publicly noticed materials renders the notice deficient. Public notice requirements under applicable federal, state, and District rules require that the public be informed of the proposed action and the basis for the District's preliminary decision, but do not require inclusion of all underlying technical working documents or internal attachments within the public notice itself.

As part of the evaluation of the proposed project, the District performed a Health Risk Assessment of the emissions from the proposed operation using guidelines and procedures established by the California Office of Environmental Health Hazard Assessment to evaluate potential health risks to the surrounding community under conservative, worst-case assumptions. A summary of the results of this analysis was included in the project evaluation, consistent with District precedent. The results indicate that the project would not pose an unacceptable risk to the surrounding community, provided the equipment is operated with the proposed emission control technology and in compliance with permit conditions.

Appendix E, which includes the Technical Services Memorandum and Air Quality Analysis (AAQA), summarizes the health risk evaluation conducted for the proposed project, including the methodology used and the conclusions reached regarding compliance with applicable health risk thresholds. This information provides the regulatory basis for the District's preliminary decision and is sufficient to inform the public of the nature of the analysis and its outcome. The four items identified by the commenter are supporting materials used during the District's technical review process and do not establish independent regulatory determinations. These materials are maintained as part of the District's administrative record and are available for public review upon request.

Comment #4 from CCEJN:

The equipment description lists the engine model as QS730-G5 NR2. However, the included Cummins Exhaust Emission Data Sheet is for a Model QST30-G5 NR2, and the Cummins 2023 EPA Tier 2 Exhaust Emission Compliance Statement says it covers Models QSK30, QST30-G, and QST30-G5 NR2. We do not see Model QS730-G5 NR2 listed on either document.

We are also wondering why the Emission Factors table says the source of emissions is the ARB/EPA Certification when one is not included in these documents? If this is a 2012 engine, we believe the District is required to include the CARB Executive Order or EPA Certification for

this model engine for that year to show the District is doing its due diligence in ensuring proposed permit equipment information is correct and accurate.

District Response to Comment #4:

The District acknowledges the commenter's observation regarding the engine model designation and the emissions documentation included with the project materials.

The proposed engine is a 2012 QST30-G5 NR2 engine. The reference to "QS730-G5 NR2" in the equipment description was a **typographical error**, which has been corrected in the engineering evaluation. The Cummins Exhaust Emission Data Sheet included in Appendix B corresponds to the QST30-G5 NR2 engine family and is representative of the proposed engine's model year, configuration, and emission characteristics.

Emission factors used in the engineering evaluation were based on the engine manufacturer's exhaust emission data provided by Cummins Power Generation. The District verified with the engine supplier that the emission factors contained in the data sheet are applicable to this specific engine. The 2023 EPA exhaust emission compliance statement referenced by the commenter was relied upon, as it applies to later model years and does not represent the certified emissions for a 2012 engine.

The engine is classified as a Tier 2 engine, based on the U.S. EPA family number listed on the engine data plate, which was reviewed by the District. For this project, the manufacturer's emissions data was determined to be the most accurate and representative source for establishing emission rates for the specific model year and engine configuration.

The evaluation has been updated to correct the typographical error in the equipment description and to clearly identify the engine manufacturer's exhaust emission data sheet as the source of emission factors used in the analysis. These revisions do not alter the conclusions of the evaluation.

Comment #5 from CCEJN:

To get ahead of the game, the emission factors certified by CARB and the EPA assume a useful life of 10 years, which would have been 2022. Therefore, if this engine does receive an ATC permit, we would like the District to include a permit condition requiring a start-up inspection source test to prove this old engine actually does achieve the 2012 certified emission factors.

District Response to Comment #5:

Pursuant to District Policy APR 1705, Section VII, the District does not require source testing for internal combustion engines that are EPA-, CARB-, or District-certified to meet applicable emissions standards, except where such testing is explicitly required by rule or regulation. There are no applicable rules or regulations that require source testing of this emergency IC engine.

The commenter's reference to a 10-year "useful life" does not establish a requirement for source testing. Certified useful life values are used for certification and regulatory applicability purposes and do not, by themselves, trigger testing requirements or invalidate certified emission factors. Compliance with emission standards is based on proper operation, maintenance, and continued compliance with applicable permit conditions, not solely on the age of the engine.

Accordingly, because the engine is certified to the applicable emission standards and no rule or regulation requires source testing for this unit, the District has determined that a source test is not required.

Comment #6 from CCEJN:

First, the ATC permit application review in question says the District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources.

However, a delegation of NESHAP federal register release from June 28, 2006 (below) appears to say the District has not asked to be able to enforce it. To the normal reader, the words used make it sound like the EPA will not give the District authority to enforce Subpart ZZZZ. Can the District clarify if the only reason the subpart is not being evaluated is because the District has not asked for it?

Second, an EPA federal register release on March 19, 2011 said,

> *Any request for approval under CAA section 112(l) must meet the approval criteria in 112(l)(5) and Subpart E. To streamline the approval process for future applications, a State or local agency may submit a one-time demonstration that it has adequate authorities and resources to implement and enforce any CAA section 112 standards. If such demonstration is approved, then the State or local agency would no longer need to resubmit a demonstration of these same authorities and resources for every subsequent request for delegation of CAA section 112 standards. However, EPA maintains the authority to withdraw its approval if the State does not adequately implement or enforce an approved rule or program.2*

This federal registry entry is more recent and appears to say future demonstrations for each individual section 112 NESHAP are not needed in order to also be delegated authority for those regulations. We read this entry as the District already has authority and the District now just needs to update Rule 4002 to list Subpart ZZZZ and any other subparts created since 2004.

District Response to Comment #6:

Delegations of federal authority for implementation and enforcement of NESHAP standards under Clean Air Act (CAA) section 112(l) are codified in 40 CFR §63.99. For area sources of hazardous air pollutants (HAPs), the District has been delegated authority only for those

NESHAP subparts that are both promulgated in 40 CFR Part 63 and expressly incorporated by reference in District Rule 4002, as approved by EPA. As of the May 20, 2004, amendment to Rule 4002, this delegation is reflected in 40 CFR 63.99(a)(5)(i)(B)(9).

The commenter cites a June 28, 2006 Federal Register notice and a subsequent March 19, 2011 Federal Register notice and interprets those notices as providing the District with blanket authority to implement and enforce all CAA section 112 standards, including 40 CFR Part 63, Subpart ZZZZ, without the need for further delegation actions. That interpretation is incorrect.

The March 19, 2011 Federal Register language describes a procedural option under which a state or local agency may submit a one-time demonstration to EPA establishing that it has adequate authority and resources to implement and enforce section 112 standards, thereby streamlining future delegation requests. However, such a demonstration must still be submitted to EPA and approved, and any resulting delegation must be explicitly codified in 40 CFR §63.99. The District has not submitted, nor has EPA approved, a one-time demonstration granting the District blanket authority over all CAA section 112 standards. Accordingly, no such blanket delegation exists.

Because the District has not been delegated authority to implement or enforce 40 CFR 63, Subpart ZZZZ for area sources, those requirements are not included in the proposed permit. EPA retains direct implementation and enforcement authority for Subpart ZZZZ at area sources.

In addition, Subpart ZZZZ applies specifically to stationary internal combustion engines. As described in the engineering evaluation, Federal Express intends to continue operating the subject engine as a transportable, trailer-mounted unit that is housed at the Stockton facility and may be operated at that site or deployed to other Federal Express sites during emergency conditions. Based on this operating scenario, Subpart ZZZZ is not applicable to the unit as proposed.

Comment #7 from CCEJN:

We believe the Federal Express Corporation is well aware of the permitting requirements for an emergency engine. Therefore, the date that must be used for BACT purposes is the date the ATC application submitted by Federal Express was deemed complete when they decided they wanted to use a PERP engine (that they potentially owned) on site as a stationary source emergency engine. Nothing else can be used to back date the BACT applicability date - not an invoice when a PERP engine was purchased or the company saying they might use the engine on site. They legally couldn't without applying for an ATC permit, and they knew that.
We also believe the District must explain why they said in this document the engine was installed at a location that did not exist in 2012.

District Response to Comment #7:

District Rule 2201 (New and Modified Stationary Sources) applies to the **construction, installation, or modification** of emission units at a stationary source and requires BACT for

new or modified units subject to the rule. Consistent with the structure and intent of Rule 2201, BACT is a **technology-based standard applicable to equipment being constructed or installed**, rather than a standard triggered by when an Authority to Construct application is submitted or deemed complete.

As discussed in response to Comment #1, District Compliance staff observed the subject engine located at the Stockton facility during a site inspection in December 2021, establishing that the engine was installed at the site prior to that date. While the engine is a 2012 model year unit and was originally deployed elsewhere within the Federal Express fleet, the engineering evaluation has been updated to clarify that the engine was relocated to and installed at the Stockton facility prior to December 2021.

At the time the engine was installed at the Stockton facility, the unit met the BACT requirements applicable to emergency IC engines in effect at the time. Had the facility applied for an Authority to Construct when the engine was installed, the District would have issued a permit based on those requirements. Accordingly, there was no approvability issue associated with the engine.

Where equipment is installed prior to permit issuance, it is long-standing District practice, consistent with the structure and intent of District Rule 2201, to determine BACT applicability based on the requirements in effect at the time of installation and to separately address permitting or compliance considerations, as appropriate. Consistent with this practice, the District conducted an additional BACT analysis to evaluate whether technologically feasible add-on controls to meet current BACT requirements would be required. As documented in the engineering evaluation (Appendix D), selective catalytic reduction and a diesel particulate filter were evaluated and determined to be not cost effective for this application.

The updates made to the engineering evaluation provide additional context regarding the installation history of the engine and include minor administrative clarifications. These updates did not result in any changes to the proposed emission rates or the proposed Authority to Construct permit conditions.