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

Facility Name:	[Facility Name]	Date:	June 1, 2016
Mailing Address:	[Mailing Address]	Engineer/ Specialist:	[Your Name]
		Lead Engineer:	[Lead Engr Name]
Contact Person:	[Contact Person]		
Telephone:	[Phone #]		
Application #:	[ATC #]		
Project #:	[Project #]		
Complete:	[Deemed Complete]		

Note: This GEAR is to be used for **emergency standby and emergency** IC engines. Section 3.15 of District Rule 4702 defines an "Emergency Standby Engine" as 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. Section 4.3 of District Rule 4702 defines an "Emergency Engine" as an internal combustion engine which is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood.

I. Proposal

[Facility Name] is proposing to install/modify a XXX bhp (intermittent) natural gas-fired emergency standby internal combustion (IC) engine powering a [brief description of equipment].

{For Title V facilities that did not request ATC w/ COC, use the following:}
"Facility name" received their Title V Permit on September 5, 2002. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). But the facility has not requested that this project be processed in that manner; therefore, "Facility name" will be required to submit a Title V minor modification application prior to operating under the revised provisions of the ATC issued with this project.

{For Title V facilities that request ATC w/ COC, use the following:}
"Facility name" received their Title V Permit on July 10, 1998. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can

be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day Environmental Protection Agency (EPA) comment period will be satisfied prior to the issuance of the Authority to Construct. "Facility name" must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

{Expand proposal, discussions, and tables as necessary to accommodate extra units or special cases using APR-1010, and adjust page breaks so that the report looks good.}

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (8/15/19)
Rule 2520 Federally Mandated Operating Permits (8/15/19)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (8/19/21)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

{Indicate the actual location of this project including the street address. Use Universal Transverse Meridian (UTM) coordinates, or township, section and range if street address is not practical. Verify whether or not the equipment is or will be located within 1,000 feet of the nearest outer boundary of a K-12 school (using Google maps etc.). If there is a school within 1,000 feet, check to see if there is another school with ¼ mile of the emissions source and include that school with the school notice. This will be stated in the compliance Section VIII of the EE.}

{For facilities with Street Addresses, use the following:}
The project is located at 1132 N. Belmont Rd. in Exeter, CA. The District has verified that the equipment [is/is not] located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 [is/is not] applicable to this project.

{For facilities with a Mount Diablo Base Meridian Location, use the following:}

The equipment will be located at the 31X oil and water treatment plant in the Cymric Oil Field, within the SW/4 of Section 31, Township 29S, Range 21E. The District has verified that the equipment [is/is not] located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 [is/is not] applicable to this project.

{For facilities with a descriptive location, use the following:}
The site is located on the eastern side of 25th Avenue, approximately one mile south of State Route (SR) 198, in Kings County. The District has verified that the equipment [is/is not] located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 [is/is not] applicable to this project.

IV. Process Description

The emergency standby engine powers [brief description of equipment]. Other than emergency operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

{Note: The maximum intermittent hp rating of the engine shall be used in the equipment description.}

{For an engine being installed to power primary mechanical or an electrical generator during periods of unscheduled power outages beyond the control of the operator, use the following equipment description:}

X-XXXX-XX-XX: [XXX] BHP (INTERMITTENT) [MAKE] MODEL [MODEL #] [LEAN-BURN or RICH-BURN] NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE [WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR)] POWERING AN [ELECTRICAL GENERATOR]

{If the engine being installed is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood, use the following equipment description:}

X-XXXX-XX-XX: [XXX] BHP (INTERMITTENT) [MAKE] MODEL [MODEL #] [LEAN-BURN or RICH-BURN] NATURAL GAS-FIRED EMERGENCY IC ENGINE [WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR)] POWERING A [FIREWATER PUMP]

{If the engine being installed is for a direct-drive pump for a drinking water system, use the following equipment description:}

X-XXXX-XX-XX: [XXX] BHP (INTERMITTENT) [MAKE] MODEL [MODEL #] [LEAN-BURN or RICH-BURN] NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE [WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR)] POWERING A DRINKING WATER SYSTEM

VI. Emission Control Technology Evaluation

Note: Place a lowercase "x" in the box of all of the applicable control technologies that the engine is equipped with.

The engine is equipped with:
[ ] Positive Crankcase Ventilation (PCV) or 90% efficient control device
[ ] Non-Selective Catalytic Reduction
[ ] Air/Fuel Ratio or an O_2 Controller
[ ] Lean Burn Technology

Note: Delete the following paragraphs if equipment/technology is not proposed or required.

The PCV system reduces crankcase VOC and PM_{10} emissions by at least 90% over an uncontrolled crankcase vent.

Non-Selective Catalytic Reduction (NSCR) decreases NO_X, CO and VOC emissions by using a catalyst to promote the chemical reduction of NO_X into N_2 and O_2, and the chemical oxidation of VOC and CO into H_2O and CO_2.

The fuel/air ratio controller, (oxygen controller) is used in conjunction with the NSCR to maintain the amount of oxygen in the exhaust stream to optimize catalyst function.

Lean burn technology increases the volume of air in the combustion process and therefore increases the heat capacity of the mixture. This technology also incorporates improved swirl patterns to promote thorough air/fuel mixing. This in turn lowers the combustion temperature and reduces NO_X formation.

VII. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day *{Note: Might be less than 24 hrs/day pending HRA results, change accordingly.}*
Non-emergency operating schedule:	100 hours/year
EPA F-factor (adjusted to 60 °F):	8,578 dscf/MMBtu (40 CFR 60 Appendix B)
Fuel heating value:	1,000 Btu/dscf (District Policy APR-1720, dated 12/20/01)
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Sulfur concentration:	2.85 lb-S/MMscf (District Policy APR-1720, dated 12/20/01)
Thermal efficiency of engine:	commonly ≈ 35%

Catalyst control efficiencies: 90% for NO_X, 80% for CO, and 50% for VOC (*Update On Emissions - Form 960*, Second Edition, Waukesha Engine Division, Dresser Industries, October, 1991) *{Note: If the Applicant supplies the catalyst control efficiencies, change accordingly.}*

{Include the following assumption if the applicant has only supplied the NO_X + VOC emissions factor and assume this is the value for NO_X emissions only and use AP-42 for VOC emissions.}

- The applicant has only supplied an emissions factor for NO_X and VOC emissions combined. Therefore the District will use this combined emissions factor as the NO_X emissions factor and will use the AP-42 value as the VOC emissions factor for this engine (District assumption for worst-case emissions).

B. Emission Factors

Note: List emission factors and source(s). If not available, use the applicable AP-42 emission factors below.

{For (2-stroke) Lean Burn IC engines:}

Emission Factors			
Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/bhp-hr)*	Source
NO_X	3.17	10.4	AP-42 (7/00) Table 3.2-1
SO_X	0.00285	0.0094	Mass Balance Equation Below**
PM_{10}***	0.048	0.158	AP-42 (7/00) Table 3.2-1
CO	0.386	1.27	AP-42 (7/00) Table 3.2-1
VOC	0.12	0.395	AP-42 (7/00) Table 3.2-1

*g/bhp-hr equivalent of lb/MMBtu values are calculated as follows (ex. for SO_X):

$$3.17 \frac{lb-NO_x}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr} \times \frac{1\,bhp input}{0.35\,bhp out} \times \frac{453.6\,g}{lb} = 10.4 \frac{g-NO_x}{bhp-hr}$$

**SO_X is calculated as follows:

$$0.00285 \frac{lb-SO_x}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr} \times \frac{1\,bhp input}{0.35\,bhp out} \times \frac{453.6\,g}{lb} = 0.0094 \frac{g-SO_x}{bhp-hr}$$

***PM_{10} value includes both filterable (3.84×10^{-2} lb/MMBtu) and condensable (9.91×10^{-3} lb/MMBtu) emissions.

{For (4-stroke) Lean Burn IC engines:}

Emission Factors			
Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/bhp-hr)*	Source
NO_X	4.08	13.4	AP-42 (7/00) Table 3.2-2
SO_X	0.00285	0.0094	Mass Balance Equation Below**
PM_{10}***	0.010	0.033	AP-42 (7/00) Table 3.2-2
CO	0.557	1.84	AP-42 (7/00) Table 3.2-2
VOC	0.118	0.389	AP-42 (7/00) Table 3.2-2

*g/bhp-hr equivalent of lb/MMBtu values are calculated as follows (ex. for SO_X):

$$4.08 \quad \frac{lb}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr} \times \frac{1\,bhp\,input}{0.35\,bhp\,out} \times \frac{453.6\,g}{lb} = 13.4 \quad \frac{g-NO_x}{bhp-hr}$$

**SO_X is calculated as follows:

$$0.00285 \quad \frac{lb-SO_x}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr} \times \frac{1\,bhp\,input}{0.35\,bhp\,out} \times \frac{453.6\,g}{lb} = 0.0094 \quad \frac{g-SO_x}{bhp-hr}$$

***PM_{10} value includes both filterable (7.71×10^{-5} lb/MMBtu) and condensable (9.91×10^{-3} lb/MMBtu) emissions.

{For (4-stroke) Rich Burn IC engines:}

Emission Factors			
Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/bhp-hr)*	Source
NO_X	2.27	7.48	AP-42 (7/00) Table 3.2-3
SO_X	0.00285	0.0094	Mass Balance Equation Below**
PM_{10}***	0.019	0.063	AP-42 (7/00) Table 3.2-3
CO	3.72	12.3	AP-42 (7/00) Table 3.2-3
VOC	0.030	0.099	AP-42 (7/00) Table 3.2-3

*g/bhp-hr equivalent of lb/MMBtu values are calculated as follows (ex. for SO_X):

$$2.27 \quad \frac{lb}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr\,input} \times \frac{1\,bhp\,input}{0.35\,bhp\,out} \times \frac{453.6\,g}{lb} = 7.48 \quad \frac{g-NO_x}{bhp-hr}$$

**SO_X is calculated as follows:

$$0.00285 \quad \frac{lb-SO_x}{MMBtu} \times \frac{1\,MMBtu}{1{,}000{,}000\,Btu} \times \frac{2{,}542.5\,Btu}{bhp-hr} \times \frac{1\,bhp\,input}{0.35\,bhp\,out} \times \frac{453.6\,g}{lb} = 0.0094 \quad \frac{g-SO_x}{bhp-hr}$$

***PM_{10} value includes both filterable (9.50×10^{-3} lb/MMBtu) and condensable (9.91×10^{-3} lb/MMBtu) emissions.

C. Calculations

1. Pre-Project Emissions (PE1)

{For a new IC engine, use the following:}
Since this is a new emissions unit, PE1 = 0.

{For a modification include the pre-project emissions, use the following:}
The daily and annual pre-project emissions are determined as follows:

Note: The following tables multiply column 2 by column 3 by column 4 then divides by column 5 with the result presented in column 6. After entering the data in columns 2, 3, and 4, highlight column 6 and press F9.

Daily Pre-Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE1 Total (lb/day)
NO_X	0.0	0	24	453.6	0.0
SO_X	0.0	0	24	453.6	0.0
PM_{10}	0.0	0	24	453.6	0.0
CO	0.0	0	24	453.6	0.0
VOC	0.0	0	24	453.6	0.0

Annual Pre-Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE1 Total (lb/yr)
NO_X	0.0	0	100	453.6	0
SO_X	0.0	0	100	453.6	0
PM_{10}	0.0	0	100	453.6	0
CO	0.0	0	100	453.6	0
VOC	0.0	0	100	453.6	0

2. Post Project PE (PE2)

{Note: The maximum intermittent hp rating of the engine shall be used in the emission calculations.}

The daily and annual PE are calculated as follows:

Note: The following tables multiply column 2 by column 3 by column 4 then divides by column 5 with the result presented in column 6. After entering the data in columns 2, 3, and 4, highlight column 6 and press F9.

Daily Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO_X	0.0	0	24	453.6	0.0
SO_X	0.0	0	24	453.6	0.0
PM_{10}	0.0	0	24	453.6	0.0
CO	0.0	0	24	453.6	0.0
VOC	0.0	0	24	453.6	0.0

Annual Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO_X	0.0	0	100	453.6	0
SO_X	0.0	0	100	453.6	0
PM_{10}	0.0	0	100	453.6	0
CO	0.0	0	100	453.6	0
VOC	0.0	0	100	453.6	0

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

Note: Calculate the SSPE1 for the entire facility (See Rule 2201, Section 4.9). SSPE1 is used to determine if the offset threshold will be surpassed during this project, for Major Source purposes, and to determine if public notice is required for a 20,000 lb/yr SSIPE.

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

{For a new facility use the following:}
Since this is a new facility, there are no existing permit units or any ERCs banked at this facility. Thus:

SSPE1 = 0 lb/yr for all criteria pollutants

{If this is an existing facility use the following statement, otherwise delete:}
Since this is an existing facility, SSPE1 is equal to the $PE1_{Total\ Pre\text{-}Project}$ from all units for all criteria pollutants.

Note: Modify the following statement as necessary to meet the specifics of the facility.
There are two existing permit units, one unimplemented ATC, and no banked ERCs at this facility. In this situation the worst-case scenario for the facility will be used for the SSPE1. For this project the worst case is with the ATC for the boiler, permit unit -3-0, being implemented. From the PE calculations done for the facility (see Appendix C), the following annual emissions were calculated. Thus:

Note: The following table adds rows 1 thru X with the results presented in the SSPE1 Total row. After entering the data in rows 1 thru X, highlight the SSPE1 Total row and press F9:

SSPE1					
Permit Unit	NO_X (lb/yr)	SO_X (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, gas dispensing operation	0	0	0	0	5,000
-2-0, emergency IC engine	125	5	58	250	6
-3-0, 10.0 MMBtu/hr boiler	2,258	50	452	5,689	753
SSPE1 Total	**2,383**	**55**	**510**	**5,939**	**5,759**

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

Note: Calculate the SSPE2 for the entire facility (See Rule 2201, Section 4.10). SSPE2 is used to determine if the offset threshold will be surpassed during this project, for Major Source purposes, and to determine if public notice is required for a 20,000 lb/yr SSIPE.

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of

Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

{For a new facility use the following:}
Since this is a new facility, SSPE2 is equal to the change in emissions for the facility due to the installation of the new emergency standby IC engine, permit unit -X-X, as previously determined in Section VII.C.2. Thus:

Note: The following table adds rows 1 thru X with the results presented in the SSPE2 Total row. Enter the calculated PE2 for the unit involved with this project from Section VII.C.2.b into the SSPE2 table below. After entering the data in rows 1 thru X, highlight the SSPE2 Total row and press F9:

SSPE2					
Permit Unit	NO_X (lb/yr)	SO_X (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-X-X, emergency IC engine	2,258	50	452	5,689	753
SSPE2 Total	**2,258**	**50**	**452**	**5,689**	**753**

{For an existing facility use the following:}
Since this is a modification to an existing facility, SSPE2 is equal to the $PE2_{Total\ Post\ Project}$ from all units for all criteria pollutants.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit -X-X. Thus:

Note: The following table adds rows 1 thru X with the results presented in the SSPE1 row. Enter the calculated PE2 for the unit involved with this project from Section VII.C.2.b into the SSPE2 table below. After entering the data in rows 1 thru X, highlight the SSPE2 Total row and press F9.

SSPE2					
Permit Unit	NO_X (lb/yr)	SO_X (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, gas dispensing operation	0	0	0	0	5,000
-2-0, emergency IC engine	125	5	58	250	6
-3-0, 10.0 MMBtu/hr boiler	2,258	50	452	5,689	753
-X-X, emergency IC engine	2,258	50	452	5,689	753
SSPE2 Total	**4,641**	**105**	**962**	**11,628**	**6,512**

5. Major Source Determination

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

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

Note: Make sure to check in PAS (View/List ERCs) to see if the facility does contain ERCs which have been banked at the source, if so please discuss with your lead engineer.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
NO_X	0	0	20,000	Yes/No	Yes/No
SO_X	0	0	140,000	Yes/No	Yes/No
PM_{10}	0	0	140,000	Yes/No	Yes/No
CO	0	0	200,000	Yes/No	Yes/No
VOC	0	0	20,000	Yes/No	Yes/No

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

Since this is a new emissions unit, BE = PE1 = 0 for all criteria pollutants.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

As discussed in Section VII.C.5 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute a SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM_{10} (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

9. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

a) Any new emissions unit with a potential to emit exceeding two pounds per day,
b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d) Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

*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.

a. New emissions units – PE > 2 lb/day

{For a project not including a installation of any new emissions units with a PE >2 lb/day, use the following:}
As discussed previously in Section I, for this project there is no installation of a new emissions unit with a PE > 2 lb/day for any criteria pollutant; therefore BACT is not triggered for a new emissions unit with a PE > 2 lb/day.

{For new emissions units, use the following:}
Since this engine is a new emissions unit, the daily emissions are compared to the BACT thresholds in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -X-X (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO_X	0.0	> 2.0	n/a	Yes/No
SO_X	0.0	> 2.0	n/a	Yes/No
PM_{10}	0.0	> 2.0	n/a	Yes/No
CO	0.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	XX	Yes/No
VOC	0.0	> 2.0	n/a	Yes/No

Thus BACT will be triggered for NO_X, SO_X, PM_{10}, CO, and VOC emissions from the engine for this project.

b. Relocation of emissions units – PE > 2 lb/day

{For a project not including a relocation of any emissions units, use the following:}
As discussed previously in Section I, this engine is not being relocated from one stationary source to another as a result of this project. Therefore, BACT is not triggered for the relocation of emissions units with a PE > 2 lb/day.

{For units being transferred to another stationary source, use the following:}
Since this engine is being relocated from one stationary source to another, the daily emissions are compared to the BACT threshold in the following table:

Relocation of an Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -X-X (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO_X	0.0	> 2.0	n/a	Yes/No
SO_X	0.0	> 2.0	n/a	Yes/No
PM_{10}	0.0	> 2.0	n/a	Yes/No
CO	0.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	XX	Yes/No
VOC	0.0	> 2.0	n/a	Yes/No

Thus BACT will be triggered for NO_X, SO_X, PM_{10}, CO, and VOC emissions from the engine for this project.

c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2 lb/day

{For a project not including a modification of any emissions units, use the following:}
As discussed previously in Section I, this engine is not being modified as a result of this project. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2 lb/day.

{For modified units, use the following:}
The AIPE is used to determine if BACT is required for emissions units that are being modified. Since this project involves modifying an existing engine, the BACT requirements are based on the daily AIPE. Therefore, the AIPE needs to be calculated as follows:

Adjusted Potential to Emit (AIPE) Calculations:

AIPE = PE2 – HAPE where,

AIPE = Adjusted Increase in Permitted Emissions, lb/day.
PE2 = the emissions units post project Potential to Emit, lb/day.
HAPE = the emissions unit's Historically Adjusted Potential to Emit, lb/day.

Historically Adjusted Potential to Emit (HAPE) Calculations:

HAPE = PE1 x (EF2 ÷ EF1) where,

PE1 = The emissions unit's Potential to Emit prior to modification or relocation.
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2 ÷ EF1 shall be set to 1.
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation.

AIPE (lb/day) = PE2 (lb/day) – [PE1 (lb/day) x (EF2 ÷ EF1)]

AIPE (lb/day) = PE2 (lb-NO_X/day) – [PE1 (lb-NO_X/day) x (EF2 ÷ EF1)]
AIPE lb/day = XX.X lb-NO_X/day – [XX.X lb-NO_X/day x (0.XXX g-NO_X/bhp-hr ÷ 0.XXX g-NO_X/bhp-hr)]
AIPE = X.X lb-NO_X/day

AIPE (lb/day) = PE2 (lb-SO_X/day) – [PE1 (lb-SO_X/day) x (EF2 ÷ EF1)]
AIPE lb/day = X.X lb-SO_X/day – [X.X lb-SO_X/day x (0.XXX g-SO_X/bhp-hr ÷ 0.XXX g-SO_X/bhp-hr)]
AIPE = X.X lb-SO_X/day

AIPE (lb/day) = PE2 (lb-PM_{10}/day) – [PE1 (lb-PM_{10}/day) x (EF2 ÷ EF1)]
AIPE lb/day = X.X lb-PM_{10}/day – [X.X lb-PM_{10}/day x (0.XXX g-PM_{10}/bhp-hr ÷ 0.XXX g-PM_{10}/bhp-hr)]
AIPE = X.X lb-PM_{10}/day

AIPE (lb/day) = PE2 (lb-CO/day) – [PE1 (lb-CO/day) x (EF2 ÷ EF1)]
AIPE lb/day = XX.X lb-CO/day – [XX.X lb-CO/day x (0.XXX g-CO/bhp-hr ÷ 0.XXX g-CO/bhp-hr)]
AIPE = X.X lb-CO/day

AIPE (lb/day) = PE2 (lb-VOC/day) – [PE1 (lb-VOC/day) x (EF2 ÷ EF1)]
AIPE lb/day = X.X lb-VOC/day – [X.X lb-VOC/day x (0.XXX g-VOC/bhp-hr ÷ 0.XXX g-VOC/bhp-hr)]
AIPE = X.X lb-VOC/day

Modified Emissions Unit BACT Applicability				
Pollutant	AIPE for unit -X-X (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO_X	0.0	> 2.0	n/a	Yes/No
SO_X	0.0	> 2.0	n/a	Yes/No
PM_{10}	0.0	> 2.0	n/a	Yes/No
CO	0.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	XX	Yes/No
VOC	0.0	> 2.0	n/a	Yes/No

Thus BACT will be triggered for NO_X, SO_X, PM_{10}, CO, and VOC emissions from the engine for this project.

d. Major Modification

{For a project not triggering a Major Modification, use the following.}
As discussed previously in Section VII.C.7, this project does not constitute a Major Modification. Therefore BACT is not triggered for a Major Modification.

{For a project triggering a Major Modification, use the following. Note: The example is for NO_X only, modify the statement accordingly.}
As discussed in Section VII.C.7 previously, this project does constitute a Major Modification for NO_X emissions; therefore BACT is triggered for NO_X for all emissions units associated with this stationary source project.

2. BACT Guideline

Note: For all units which trigger BACT for any pollutant, use one of the appropriate paragraphs.

{For rich burn engines < 132 bhp:}
BACT Guideline 3.1.5, XX quarter 200X, which appears in Appendix A of this report, covers rich burn gas-fired emergency IC engines of less than 132 brake horsepower.

{For rich burn engines ≥ 132 bhp:}
BACT Guideline 3.1.6, XX quarter 200X, which appears in Appendix A of this report, covers rich burn gas-fired emergency IC engines of greater than or equal to 132 brake horsepower.

{For lean burn engines ≥ 250 bhp:}
BACT Guideline 3.1.8, XX quarter 200X, which appears in Appendix A of this report, covers lean burn gas-fired emergency IC engines of greater than or equal to 250 brake horsepower.

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 A of this report, BACT is satisfied with:

{Note: Delete the pollutants listed that do not trigger BACT.}
{For rich burn engines < 132 bhp:}

- NO_X: No control technology (No technologically feasible option was determined to be cost effective) or
  NO_X catalyst (three-way catalyst)
- VOC: Positive crankcase ventilation or
  VOC catalyst (three-way catalyst) and positive crankcase ventilation
- PM_{10}: Positive crankcase ventilation
- CO: No control technology (No technologically feasible option was determined to be cost effective) or
  CO catalyst (three-way catalyst)

{For rich burn engines ≥ 132 bhp:}

- NO_X: Natural gas as fuel or
  NO_X Catalyst (three-way catalyst) and natural gas as fuel
- SO_X: Natural gas as fuel or
- VOC: Positive crankcase ventilation and natural gas as fuel or
  VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas as fuel
- PM_{10}: Positive crankcase ventilation and natural gas as fuel
- CO: Natural gas as fuel or
  CO catalyst (three-way catalyst) and natural gas as fuel

{For lean burn engines ≥ 250 bhp:}

- NO_X: NO_X emissions of ≤ 1.0 g/hp·hr (lean-burn natural gas-fired engine)
- VOC: VOC emissions of ≤ 1.0 g/hp·hr (lean-burn natural gas-fired engine) or 90% VOC control efficiency catalyst (oxidation catalyst or equal)
- PM_{10}: Natural gas as fuel
- CO: CO emissions of ≤ 2.75 g/hp·hr (lean burn natural gas-fired engine) or 90% CO control efficiency catalyst (oxidation catalyst or equal)

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

- {edited 3501} Emissions from this IC engine shall not exceed any of the following limits: X.XX g-NOx/bhp-hr, X.XX g-PM10/bhp-hr, X.XX g-CO/bhp-hr, or X.XX g-VOC/bhp-hr. [District Rule 2201]

{Use the following condition if BACT for NO_X, SO_X, or PM_{10} is triggered and is required by BACT:}

- {3491} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]

{Use the following condition if BACT for PM_{10} or VOC is triggered and is required by BACT or if the engine is already equipped with a PCV system:}

- {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system which recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]

{Use the following condition if BACT for NO_X, CO, or VOC is triggered and is required by BACT or if the engine is already equipped with a NSCR system:}

- {3492} This IC engine shall be equipped with a three-way catalyst. [District Rule 2201]

{Use the following special case BACT conditions as required:}

- {3492} This IC engine shall be equipped with a three-way catalyst. [District Rule 2201]

- {3493} This IC engine shall be equipped with a three-way catalyst and shall be fired on natural gas fuel only. [District Rule 2201]

- {3491} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]

B. Offsets

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

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, which is a new facility that is also a Major Source,
b. Major Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,

d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

{For a new facility – non Major Source, use the following:}
New Major Sources are new facilities, which are also Major Sources. As shown previously in Section VII.C.5, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

{For an existing facility becoming a Major Source, use the following:}
A New Major Source is a new facility, which is also a major source. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

As demonstrated previously in Section VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

{For a project not including a installation of any new emissions units with a PE >100 lb/day, use the following:}
As discussed previously in Section I, for this project there is no installation of a new emissions unit with a PE > 100 lb/day for any criteria pollutant; therefore public noticing for new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant is not required.

{For a new engine installation, use the following:}

The Daily PE for this new emissions unit is compared to the daily PE Public Notice Thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE for unit -X-X (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO_X	0.0	100	Yes/No
SO_X	0.0	100	Yes/No
PM_{10}	0.0	100	Yes/No
CO	0.0	100	Yes/No
VOC	0.0	100	Yes/No

Note: Repeat table for any other engines involved with this project, as necessary.

As detailed in the preceding table, [there were no 100 lb/day thresholds/the NO_X 100 lb/day threshold was] surpassed with this project. Therefore, public noticing [is/is not] required for daily emissions greater than 100 lb/day for a new emissions unit.

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 to the offset thresholds in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Offset Threshold (lb/yr)	Public Notice Required?
NO_X	0	0	20,000	Yes/No
SO_X	0	0	54,750	Yes/No
PM_{10}	0	0	29,200	Yes/No
CO	0	0	200,000	Yes/No
VOC	0	0	20,000	Yes/No

As detailed in the preceding table, [there were no offset thresholds/the NO_X offset threshold was] surpassed with this project. Therefore, public noticing [is/is not] required for this project for surpassing the SSPE2 offset thresholds.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Note: The following table subtracts column 3 from 2 with the result presented in column 4. After entering the data in columns 2 and 3, highlight column 4 and press F9.

SSIPE Public Notice Threshold					
Pollutant	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)	SSIPE Threshold (lb/yr)	Public Notice Required?
NO_X	0	0	0	20,000	Yes/No
SO_X	0	0	0	20,000	Yes/No
PM_{10}	0	0	0	20,000	Yes/No
CO	0	0	0	20,000	Yes/No
VOC	0	0	0	20,000	Yes/No

As detailed in the preceding table, [there were no SSIPE thresholds/the SSIPE threshold was] surpassed with this project. Therefore, public noticing [is/is not] required for exceeding the SSIPE thresholds.

2. Public Notice Action

{For a project not requiring public notification, use the following:}
As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

{For a project requiring public notification, use the following:}
As discussed above, public noticing is required for this project for surpassing the [PE > 100 lb/day for a new emissions unit / offsets / or the SSIPE] threshold for [name the criteria pollutant(s)] emissions. 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.

{For ATC w/ COC, use the following:}

In addition, this facility is a Title V facility and has requested that the ATC issued as a result of this project be issued with a COC (as discussed previously in Section I). Therefore, COC notice documents will be submitted to the Environmental Protection Agency (EPA) prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. For this emergency standby IC engine, the DELs are stated in the form of emission factors, the maximum engine horsepower rating, and the maximum operational time of [24 or less if required by the HRA] hours per day. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {edited 3501} Emissions from this IC engine shall not exceed any of the following limits: X.XX g-NOx/bhp-hr, X.XX g-PM10/bhp-hr, X.XX g-CO/bhp-hr, or X.XX g-VOC/bhp-hr. [District Rule 2201]

{For an engine that is limited to less than 24 hrs/day of operation, use the following:}

In addition, the HRA (see Appendix B) limits operation of the engine to XX hours per day. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {edited 3398} Operation of this engine for all purposes combined shall not exceed XX hours per day. [District Rules 2201 and 4102]

Note: Edit the following paragraph to explain which pollutants are affected and what type(s) of control device(s) is/are installed on the engine involved with this project.

{If the following requirements have not already been stated in the preceding BACT section, use the following special case DEL conditions as required:}

In addition, the DELs for NO_X, SO_X, PM_{10}, CO, and VOC emissions are established by having a three-way catalyst installed on the engine, an oxidation catalyst installed on the engine, and the type or types of fuel being combusted in the engine. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3492} This IC engine shall be equipped with a three-way catalyst. [District Rule 2201]

- {3493} This IC engine shall be equipped with a three-way catalyst and shall be fired on natural gas fuel only. [District Rule 2201]

- {3491} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. As required by District Rule 4702, *Stationary Internal Combustion Engines - Phase 2*, this IC engine is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

(<u>Note</u>: Applicable only when public notice is triggered, otherwise delete this section.)
(<u>Note</u>: If there is an exceedance of the Ambient Air Quality Standards, this project no longer qualifies as a GEAR. Talk to a supervisor.)

An AAQA is conducted by the Technical Services group for any project with an increase in emissions and triggers public notice. Discuss the AAQA results as follows:

<u>For example</u>:
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 X** 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 $PM_{2.5}$.

(Note: Special permit conditions may be required as a result of the AAQA.)

Rule 2520 Federally Mandated Operating Permits

{For a Non-Major Source, use the following:}
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.

{If becoming a Major Source, use the following:}
Since this facility's emissions will now exceed the major source thresholds of Rule 2201, this facility is a major source. Pursuant to Rule 2520 Section 5.1, and as required by permit condition, the facility will have up to 12 months from the date of commencing operation of this engine to either submit a Title V Application or comply with District Rule 2530 *Federally Enforceable Potential to Emit.* Therefore, the following condition will be listed on the ATC to ensure compliance:

- {3487} This facility will have up to 12 months from the date of this Authority to Construct (ATC) issuance to either submit a Title V application or comply with District Rule 2530 - Federally Enforceable Potential to Emit. [District Rule 2520]

{For an existing Major Source who has not requested ATC w/ COC, use the following:}
This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed previously in the proposal section, the facility has not applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with a minor modification, prior to operating with the proposed modifications. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520]

{For an existing Major Source who has requested ATC w/ COC, use the following:}
This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed previously in the proposal section, the facility has

applied for a Certificate of Conformity (COC). Therefore, the following conditions will be listed on the ATC:

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]

- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

In addition, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to reciprocating natural gas-fired IC engines.

Rule 4101 Visible Emissions

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

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

{For an engine which powers a drinking water system, and the facility chooses the higher Ringlemann allowance, use the following:}

Note: Make sure annual emissions, as calculated previously in Section VII.C.2, reflect operation of 24 hours per year.}

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.

However, this engine exclusively powers a drinking water system. Pursuant to California Health and Safety Code 41701.6, this engine may be allowed to emit visible emissions of up to Ringelmann 2, provided that the non-emergency use is limited to no more than 30 minutes per week or two hours per month. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {1346} This engine shall be used exclusively to operate a drinking water system [CH&SC 41701.6]

- {3454} 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 2 or 40% opacity. [CH&SC 41701.6]

- {3819} 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 either of the following limits: 30 minutes per week or 2 hours per month. [District Rule 4702 and CH&SC 41701.6]

{For an engine which powers a drinking water system, and the facility <u>does not</u> choose the higher Ringlemann allowance, use the following.}
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.

However, this engine exclusively powers a drinking water system. Pursuant to California Health and Safety Code 41701.6, this engine may be allowed to emit visible emissions of up to Ringelmann 2, provided that the non-emergency use is limited to no more than 30 minutes per week or two hours per month. For this project the facility has chosen not to exercise this option. Therefore, the following condition will be listed on the ATC to ensure compliance:

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

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

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

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

{If the total facility Prioritization score including this project is ≤ 1.0, use the following statement:}

District policy APR 1905 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. A Health Risk Assessment (HRA) is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (see Appendix B), the total facility prioritization score including this project was less than or equal to one. Therefore, no further analysis is required to determine the impact from this project.

{If the total facility Prioritization score including this project > 1.0, use the following statement:}

Therefore pursuant to the policy, a risk management review has been performed for this project to analyze the impact of toxic emissions. For projects where the increase in cancer risk is greater than one per million, Toxic Best Available Control Technology (T-BACT) is required.

The HRA results for this project are shown below (see the HRA Summary in Appendix B):

Note: Expand table as necessary to include extra units.

HRA Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
X-XXXX-XX-XX	N/A	N/A	X.X in a million	Yes/No

{For a project where T-BACT not triggered, use the following:}
As demonstrated previously, 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.

{For a project where T-BACT is triggered, use the following:}
As demonstrated previously, T-BACT is required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for PM_{10}. T-BACT is satisfied with BACT for PM_{10}, as discussed in Appendix A, which is PM_{10} emissions from this engine of 0.1 g/bhp-hr or less. The engine involved with this project has a PM_{10} emissions factor of X.XX g/bhp-hr, as presented previously in Section VII.B.

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 HRA Summary in Appendix B of this report, the emissions increases for this project was determined to be less than significant.

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

Note: Delete the following if not applicable. Include any extra HRA conditions as necessary.

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]

- {edited 3398} Operation of this engine for all purposes combined shall not exceed XX hours per day. [District Rules 2201 and 4102]

Rule 4201 Particulate Matter Concentration

Particulate matter emissions from the engine will be less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions as shown by the following:

Note: Adjust the following equation for the specific PM_{10} emission factor for the engine(s) involved with this project. Add more calculations for multiple engines.

$$0.1\ \frac{g-PM_{10}}{bhp-hr} \times \frac{1g-PM}{0.96g-PM_{10}} \times \frac{1bhp-hr}{2{,}542.5\,Btu} \times \frac{10^6\,Btu}{8{,}578\,dscf} \times \frac{0.35\,Btu_{out}}{1\,Btu_{in}} \times \frac{15.43\,grain}{g} = 0.0244\ \frac{grain-PM}{dscf}$$

Since 0.0244 grain-PM/dscf is ≤ to 0.1 grain per dscf, compliance with Rule 4201 is expected.

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

Rule 4701 Internal Combustion Engines – Phase 1

Pursuant to Section 7.6.3.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to natural gas-fired emergency standby or emergency IC engines. Therefore, this natural gas-fired emergency IC engine will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

The purpose of this rule is to limit the emissions of nitrogen oxides (NO_X), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

{For an "emergency standby" engine being installed to power primary mechanical or an electrical generator during periods of unscheduled power outages beyond the control of the operator, use the following:}
Pursuant to Section 4.2, except for the requirements of Sections 5.7 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition:

1) An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable 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.

Section 3.15 defines an "Emergency Standby Engine" as 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.

Therefore, the emergency standby IC engine involved with this project will only have to meet the requirements of Sections 5.7 and 6.2.3 of this Rule.

Section 5.7 of this Rule requires that the owner of an emergency standby engine shall comply with the requirements specified in Section 5.7.2 through Section 5.7.5 below:

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

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

3) Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable 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 Stationary 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.

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

- {3405} 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]

- {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]

- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

- {4985} 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]

- {4986} 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]

- {3806} 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 100 hours per calendar year. [District Rule 4702]

Section 6.2.3 requires that 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 submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {4987} 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]

- {3497} 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]

  {If the engine is located in a remote location, use the following condition in place of the condition above:}

- {3498} 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. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

{For an "emergency" engine being installed and operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood, use the following:}

Pursuant to Section 4.3, except for the requirements of Section 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following conditions:

1) The engine is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood, and
2) Except for operations associated with Section 4.3.1.1, the engine is limited to operate no more than 100 hours per calendar year as determined by an operational nonresettable elapsed operating time meter, for periodic

maintenance, periodic readiness testing, and readiness testing during and after repair work of the engine, and

3) The engine is operated with a nonresettable elapsed operating time meter. In lieu of installing a nonresettable 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. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Therefore, the emergency IC engine involved with this project will only have to meet the requirements of Section 6.2.3 of this Rule.

Section 6.2.3 requires that 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 submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3806} 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 100 hours per calendar year. [District Rule 4702]

- {3500} 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, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). 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]

- {3497} 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]

  {If the engine is located in a remote location, use the following condition in place of the condition above:}

- {3498} 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. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

In addition, the following conditions will be listed on the ATC to ensure compliance:

- {3404} This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

- {4985} 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]

- {4986} 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]

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) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R}$

$$2.85 \quad \frac{lb-S}{MMscf-gas} \times \frac{1\,scf-gas}{1{,}000\,Btu} \times \frac{1\,MMBtu}{8{,}578\,scf} \times \frac{1\,lb-mol}{64\,lb-S} \times \frac{10.73\,psi-ft^3}{lb-mol-{}^\circ R} \times \frac{520\,{}^\circ R}{14.7\,psi} \times 1{,}000{,}000 = \quad 1.97 \quad ppmv$$

Since 1.97 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3491} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]

California Health & Safety Code 42301.6 (School Notice)

Reference project location and its proximity to a school and state whether or not school notice is required for this project.

Example (a): (For a Non-School Notice project - > 1,000 feet.)
The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

Example (b): (For a Non-School Notice project – no increase in emissions)

The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

Example (c): (For a School Notice project.)
The District has verified that this site is located within 1,000 feet of the following school:

School Name: [Name]
Address: [Address]

Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is required.
Prior to the issuance of the ATC for this equipment, notices will be provided to the parents/guardians of all students of the affected school, and will be sent to all residents within 1,000 ft of the site.

[If there is no school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:
The District has verified that there are no additional schools within ¼ mile of the emission source.

[If there is a school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:
Since a school notice has been triggered (due to the above-listed school within 1,000 of the emission source), notices will also be provided to the parents/guardians of all students from all school sites within ¼ mile of the emission source. The following schools(s) are within ¼ mile of the emission source:

School Name: [Name]
Address: [Address]
(add additional schools if necessary)

(Note: Refer to FYI - 71 for guidance on how to process a School Notice project.)

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

This regulation applies to any new or in-use stationary diesel-fueled compression ignition (CI) emergency standby engine. The engine involved with this project is fired on natural gas and is not compression ignited. Therefore, this regulation is not applicable to the engine involved with this project.

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.

<u>Indemnification Agreement/Letter of Credit Determination</u>

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 are 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

Note: Recommend that the project will be approved or denied and reference the attached Authority(s) to Construct.

{For a project where noticing (public, school, or EPA) is not required, use the following:}
Compliance with all applicable rules and regulations is expected. Issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

{For a project where public noticing is triggered, use the following:}
Pending a successful NSR Public Noticing period, issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

{For a project where EPA noticing is triggered, use the following:}
Pending a successful EPA 45-day COC comment period, issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

{For a project where school noticing is triggered, use the following:}
Pending a successful School Noticing period, issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

X. Billing Information

Note: Expand the following table as necessary to include extra units.

Billing Schedule			
Permit Number	**Fee Schedule**	**Fee Description**	**Fee Amount**
X-XXXX-XX-XX	3020-10-X	XX bhp IC engine	$XXX.00

List of Appendixes

Note: Adjust the following appendixes as necessary.
A. BACT Guideline and BACT Analysis
B. HRA Summary
C. SSPE1 Calculations
D. QNEC Calculations
E. Draft ATC and Emissions Profile *{Note: For public notice projects, the emissions profile is not included as a part of the Engineering Evaluation package.}*

Appendix A
BACT Guideline and BACT Analysis

[Select only the appropriate BACT Analyses]

{Use the following section for engines < 132 bhp:}

[For BACT Guideline 3.1.5:]

Top Down BACT Analysis for the Emergency IC Engine(s)

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

1. BACT Analysis for NO_X Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies technologically feasible BACT for NO_X emissions from rich-burn emergency natural gas IC engines < 132 bhp as follows:

1) NO_X catalyst (three-way catalyst)

No achieved in practice alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) NO_X catalyst (three-way catalyst)

d. Step 4 - Cost Effectiveness Analysis

{If the applicant is <u>proposing</u> a NO_X catalyst (three-way catalyst) for this application, use the following:}

The applicant is proposing a NO_X catalyst (three-way catalyst). This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is <u>not proposing</u> a NO_X catalyst (three-way catalyst) for this application and the facility <u>is</u> a "small emitter", use the following:}

This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99)

Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

{If the applicant is not proposing a NO_X catalyst (three-way catalyst) for this application and the facility is not a "small emitter", use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the cost-effective analysis, a NO_X catalyst (three-way catalyst) is/is not cost effective.

e. Step 5 - Select BACT

{If the applicant is proposing a NO_X catalyst (three-way catalyst) for this application or if a NO_X catalyst (3 way) is determined to be cost effective, use the following:}
BACT for NO_X emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp is a NO_X catalyst (three-way catalyst). The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a NO_X catalyst (three-way catalyst); therefore BACT for NO_X emissions is satisfied.

{If a NO_X catalyst (three-way catalyst) is not cost effective or the facility is a small emitter, use the following:}
There is no control technology that is cost effective for BACT for NO_X emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine without a NO_X catalyst (three-way catalyst); therefore BACT for NO_X emissions is satisfied.

{Use the following section for engines ≥ 132 bhp:}
[For BACT Guideline 3.1.6:]

Top Down BACT Analysis for the Emergency IC Engine(s)

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

1. BACT Analysis for NO_X Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies achieved in practice BACT for NO_X emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) Natural gas, LPG, or propane as fuel

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies technologically feasible BACT for NO_X emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel
2) Natural gas, LPG, or propane as fuel

d. Step 4 - Cost Effectiveness Analysis

{If the applicant is proposing a NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel for this application, use the following:}
The applicant is proposing a XXX bhp rich-burn emergency standby natural gas IC engine with a NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel. This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is not proposing a NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel for this application and the facility is a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

{If the applicant is not proposing a NO_X catalyst (three-way catalyst) but is proposing natural gas, LPG, or propane as fuel for this application and the facility is not a "small emitter", use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the cost-effective analysis, a NO_X catalyst (three-way catalyst) is/is not cost effective. The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

{If the applicant is proposing a NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel for this application or a NO_X catalyst (3 way) is determined to be cost effective,use the following:}
BACT for NO_X emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is a NO_X catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a NO_X catalyst (3 way) and natural gas, LPG, or propane as fuel; therefore BACT for NO_X emissions is satisfied.

{If a NO_X catalyst (three-way catalyst) is not cost effective or the facility is a small emitter, use the following:}
BACT for NO_X emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine using natural gas, LPG, or propane as fuel; therefore BACT for NO_X emissions is satisfied.

{Use the following section for lean-burn engines ≥ 250 bhp:}
[For BACT Guideline 3.1.8:]

Top Down BACT Analysis for the Emergency IC Engine(s)

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

1. BACT Analysis for NO_X Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies achieved in practice BACT for NO_X emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) NO_X emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas fired engine or equal)

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies alternate basic equipment BACT for NO_X emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) ≥ 90% control efficiency (rich-burn engine with NSCR or equal)

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Alternate basic equipment -≥ 90% control efficiency (rich-burn engine with NSCR or equal)
2) NO_X emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas fired engine or equal)

d. Step 4 - Cost Effectiveness Analysis

{If the applicant is <u>not proposing</u> a ≥ 90% control efficiency (rich-burn engine with NSCR or equal for this application, use the following:}
A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

District BACT policy demonstrates how to calculate the cost effectiveness of alternate basic equipment or process:

$CE_{alt} = (Cost_{alt} - Cost_{basic}) \div (Emission_{basic} - Emission_{alt})$

where,

CE_{alt} = the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced

$Cost_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$Cost_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$Emission_{basic}$ = the emissions from the proposed basic equipment, without BACT.

$Emission_{alt}$ = the emissions from the alternate basic equipment

Based on the following cost-effective analysis, a rich-burn engine with NSCR or equal is not cost effective.

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

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

e. Step 5 - Select BACT

{If the applicant is proposing emissions of ≤ 1.0 g/hp-hr (lean-burn natural gas fired or equal) for this application, use the following:}
BACT for NO_X emissions from this lean-burn emergency standby natural gas IC engine ≥ 250 bhp is having NO_X emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas-fired or equal). The applicant has proposed to install a XXX bhp lean-burn emergency standby natural gas IC engine with NO_X emissions of X.X g/bhp-hr; therefore BACT for NO_X emissions is satisfied.

{Use the following section for engines ≥ 132 bhp:}
[For BACT Guideline 3.1.6:]

2. BACT Analysis for SO_X Emissions:

Oxides of sulfur (SO_X) emissions occur from the combustion of the sulfur, which is present in the fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies achieved in practice BACT for SO_X emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) Natural gas, LPG, or propane as fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Natural gas, LPG, or propane as fuel

d. Step 4 - Cost Effectiveness Analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for SO_X emissions from this emergency standby rich-burn natural gas IC engine ≥ 132 bhp is using natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with natural gas, LPG, or propane as fuel; therefore BACT for SO_X emissions is satisfied.

{Use the following section for engines < 132 bhp and lean-burn engines ≥ 250 bhp:}

[For BACT Guideline 3.1.5 and 3.1.8:]

2. **BACT Analysis for SO_X Emissions:**

[A full top-down BACT analysis for SO_X emissions to revise the BACT Guideline must be performed. Please discuss with your lead engineer for further instruction.]

{Use the following section for engines < 132 bhp:}

[For BACT Guideline 3.1.5:]

3. **BACT Analysis for PM_{10} Emissions:**

Particulate matter (PM_{10}) emissions result from the incomplete combustion of various elements in the fuel. A small portion of the particulates is emitted through the crankcase vent.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies achieved in practice BACT for PM_{10} emissions from rich-burn emergency natural gas IC engines < 132 bhp as follows:

1) Positive crankcase ventilation

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies technologically feasible BACT for PM_{10} emissions from rich-burn emergency natural gas IC engines < 132 bhp as follows:

1) Positive crankcase ventilation

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Positive crankcase ventilation

d. Step 4 - Cost Effectiveness Analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM_{10} emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp is having positive crankcase ventilation. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with positive crankcase ventilation; therefore BACT for PM_{10} emissions is satisfied.

{Use the following section for engines ≥ 132 bhp:}

[For BACT Guideline 3.1.6:]

3. BACT Analysis for PM_{10} Emissions:

Particulate matter (PM_{10}) emissions result from the incomplete combustion of various elements in the fuel. A small portion of the particulates is emitted through the crankcase vent.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies technologically feasible BACT for PM_{10} emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

d. Step 4 - Cost Effectiveness Analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM_{10} emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is having positive crankcase ventilation and natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with positive crankcase ventilation and natural gas, LPG, or propane as fuel; therefore BACT for PM_{10} emissions is satisfied.

{Use the following section for lean-burn engines ≥ 250 bhp:}

[For BACT Guideline 3.1.8:]

3. BACT Analysis for PM_{10} Emissions:

Particulate matter (PM_{10}) emissions result from the incomplete combustion of various elements in the fuel. A small portion of the particulates is emitted through the crankcase vent.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies technologically feasible BACT for PM_{10} emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) Natural gas as fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Natural gas as fuel

d. Step 4 - Cost Effectiveness Analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM_{10} emissions from this lean-burn emergency standby natural gas IC engine ≥ 250 bhp is having natural gas as fuel. The applicant has proposed to install a XXX bhp lean-burn emergency standby natural gas IC engine with natural gas as fuel; therefore BACT for PM_{10} emissions is satisfied.

{Use the following section for engines < 132 bhp:}
[For BACT Guideline 3.1.5]
BACT Analysis for CO Emissions:

4. BACT Analysis for CO Emissions:

Carbon monoxide (CO) emissions are generated from the incomplete combustion of air and fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies technologically feasible BACT for CO emissions from rich-burn emergency standby natural gas IC engines < 132 bhp as follows:

1) CO catalyst (three-way catalyst)

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) CO catalyst (three-way catalyst)

d. Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

{If a CO catalyst (three-way catalyst) is proposed, use the following:}
The applicant is proposing a CO catalyst (three-way catalyst). This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If CO catalyst (three-way catalyst) is not proposed and the facility is a small emitter, use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of

each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

{If CO catalyst (three-way catalyst) is not proposed and the facility is not a small emitter, use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a CO catalyst (three-way catalyst) is/ is not cost effective.

e. Step 5 - Select BACT

{If a CO catalyst (three-way catalyst) is proposed or if a CO catalyst (three-way catalyst) is cost effective, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp is using a CO catalyst (three-way catalyst). The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a CO catalyst (three-way catalyst); therefore BACT for CO emissions is satisfied.

{If CO catalyst (three-way catalyst) is not cost effective or the facility is a small emitter, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp is having no control technology. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with no control technology; therefore BACT for CO emissions is satisfied.

{Use the following section for engines ≥ 132 bhp:}
[For BACT Guideline 3.1.6:]
BACT Analysis for CO Emissions:

4. BACT Analysis for CO Emissions:

Carbon monoxide (CO) emissions are generated from the incomplete combustion of air and fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies achieved in practice BACT for CO emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) Natural gas, LPG, or propane as fuel

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies technologically feasible BACT for CO emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel
2) Natural gas, LPG, or propane as fuel

d. Step 4 - Cost Effectiveness Analysis

{If the applicant is proposing a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel for this application, use the following:}
The applicant is proposing a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel. This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is not proposing a CO catalyst (three-way catalyst) for this application and the facility is a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

{If the applicant is not proposing a CO catalyst (three-way catalyst) for this application and the facility is not a "small emitter", use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel is/is not cost effective.

e. Step 5 - Select BACT

{If the applicant is proposing a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel for this application or a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel is cost efective, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a CO catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel; therefore BACT for CO emissions is satisfied.

{If a CO catalyst (three-way catalyst) is not cost effective or the facility is a small emitter, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is having natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with natural gas, LPG, or propane as fuel; therefore BACT for CO emissions is satisfied.

{Use the following section for lean-burn engines ≥ 250 bhp:}
[For BACT Guideline 3.1.8:]
BACT Analysis for CO Emissions:

4. BACT Analysis for CO Emissions:

Carbon monoxide (CO) emissions are generated from the incomplete combustion of air and fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies achieved in practice BACT for CO emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) CO emissions of ≤ 2.75 g/bhp-hr (lean-burn natural gas-fired engine or equal)

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies technologically feasible BACT for CO emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) 90% CO control efficiency catalyst (oxidation catalyst or equal)

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies alternate basic equipment BACT for CO emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) ≥ 80% CO control efficiency catalyst (rich-burn engine with NSCR or equal)

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) 90% CO control efficiency catalyst (oxidation catalyst or equal)
2) Alternate basic equipment - ≥ 80% CO control efficiency catalyst (rich-burn engine with NSCR or equal, ≈ 2.32 g/bhp-hr)
3) CO emissions of ≤ 2.75 g/bhp-hr (lean-burn natural gas-fired engine or equal)

d. Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

{If the applicant is <u>proposing</u> a 90% CO control efficiency catalyst (oxidation catalyst or equal) for this application, use the following:}
The applicant is proposing a 90% CO control efficiency catalyst (oxidation catalyst or equal). This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is <u>not proposing</u> a 90% CO control efficiency catalyst (oxidation catalyst or equal) for this application and the facility <u>is</u> a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

However, a cost effective analysis must be performed for the alternate basic equipment option.

District BACT policy demonstrates how to calculate the cost effectiveness of alternate basic equipment or process:

$CE_{alt} = (Cost_{alt} - Cost_{basic}) \div (Emission_{basic} - Emission_{alt})$

where,

CE_{alt} = the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced

$Cost_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$Cost_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$Emission_{basic}$ = the emissions from the proposed basic equipment, without BACT.

$Emission_{alt}$ = the emissions from the alternate basic equipment

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a rich-burn engine with NSCR or equal is/is not cost effective.

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

{If the applicant is <u>not proposing</u> a 90% CO control efficiency catalyst (oxidation catalyst or equal) for this application and the facility <u>is not</u> a "small emitter", use the following:}

District BACT policy demonstrates how to calculate the cost effectiveness of alternate basic equipment or process:

$CE_{alt} = (Cost_{alt} - Cost_{basic}) \div (Emission_{basic} - Emission_{alt})$

where,

CE_{alt} = the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced

$Cost_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$Cost_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$Emission_{basic}$ = the emissions from the proposed basic equipment, without BACT.

$Emission_{alt}$ = the emissions from the alternate basic equipment

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a 90% CO control efficiency catalyst (oxidation catalyst or equal) is/is not cost effective.

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

e. Step 5 - Select BACT

{If the applicant is proposing a 90% control efficiency catalyst (oxidation catalyst or equal) for this application or if a 90% control efficiency catalyst (oxidation catalyst or equal) is cost effective, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is a 90% CO control efficiency catalyst (oxidation catalyst or equal). The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a 90% CO control efficiency (oxidation catalyst or equal); therefore BACT for CO emissions is satisfied.

{If a 90% control efficiency catalyst (oxidation catalyst or equal) is not cost effective or the facility is a small emitter, use the following:}
BACT for CO emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is having CO emissions of ≤ 2.75 g/bhp-hr (lean-burn natural gas-fired engine or equal). The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with CO emissions of X.XX g/bhp-hr; therefore BACT for CO emissions is satisfied.

{Use the following section for engines < 132 bhp:}
[For BACT Guideline 3.1.5:]
BACT Analysis for VOC Emissions:

5. BACT Analysis for VOC Emissions:

Volatile organic compounds (VOC) emissions are generated from the incomplete combustion of the fuel. Some VOCs are emitted from the crankcase of the engine as a result of piston ring blow-by.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies achieved in practice BACT for VOC emissions from rich-burn emergency natural gas IC engines < 132 bhp as follows:

1) Positive crankcase ventilation

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.5, X quarter 200X, identifies technologically feasible BACT for VOC emissions from rich-burn emergency natural gas IC engines < 132 bhp as follows:

1) VOC catalyst (three-way catalyst) and positive crankcase ventilation

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) VOC catalyst (three-way catalyst) and positive crankcase ventilation
2) Positive crankcase ventilation

d. Step 4 - Cost effectiveness analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions

{If the applicant is proposing a VOC catalyst (three-way catalyst) and positive crankcase ventilation for this application, use the following:}
The applicant is proposing a VOC catalyst (three-way catalyst) and positive crankcase ventilation. This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is not proposing a VOC catalyst (three-way catalyst) and positive crankcase ventilation for this application and the facility is a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

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

{If the applicant is not proposing a VOC catalyst (three-way catalyst) and positive crankcase ventilation for this application and the facility is not a "small emitter", use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a rich-burn engine with a VOC catalyst (three-way catalyst) and positive crankcase ventilation is/is not cost effective.

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

e. Step 5 - Select BACT

{If the applicant is proposing a VOC catalyst (three-way catalyst) and positive crankcase ventilation for this application or a VOC catalyst (three-way catalyst) and positive crankcase ventilation is cost effective, use the following:}
BACT for VOC emissions from this rich-burn emergency standby natural gas IC engine < 132 bhp is a VOC catalyst (three-way catalyst) and positive crankcase ventilation. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a VOC catalyst (three-way catalyst) and positive crankcase ventilation; therefore BACT for VOC emissions is satisfied.

{If a VOC catalyst (three-way catalyst) and positive crankcase ventilation is not cost effective, use the following:}
BACT for VOC emissions from this rich-burn emergency standby natural gas IC engines < 132 bhp is positive crankcase ventilation. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with positive crankcase ventilation; therefore BACT for VOC emissions is satisfied.

{Use the following section for engines ≥ 132 bhp:}
[For BACT Guideline 3.1.6:]
BACT Analysis for VOC Emissions:

5. BACT Analysis for VOC Emissions:

Volatile organic compounds (VOC) emissions are generated from the incomplete combustion of the fuel. Some VOCs are emitted from the crankcase of the engine as a result of piston ring blow-by.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies achieved in practice BACT for VOC emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, X quarter 200X, identifies technologically feasible BACT for VOC emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

1) VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel
2) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

d. Step 4 - Cost effectiveness analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

{If the applicant is proposing VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel for this application, use the following:}
The applicant is proposing a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel. This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is not proposing VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel for this application and the facility is a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99)

Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

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

{If the applicant is <u>not proposing</u> VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel for this application and the facility <u>is not</u> a "small emitter", use the following:}

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel is/is not cost effective.

{Delete the following if a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel is cost effective:}
The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

{If the applicant is <u>proposing</u> VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel for this application, use the following:}
BACT for VOC emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel; therefore BACT for VOC emissions is satisfied.

{If a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel is <u>not</u> cost effective or the facility <u>is</u> a "small emitter", use the following:}
BACT for VOC emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is positive crankcase ventilation, and natural gas, LPG, or propane as fuel. The applicant has proposed to install a XXX bhp rich-burn emergency standby natural gas IC engine with positive crankcase ventilation, and natural gas, LPG, or propane as fuel; therefore BACT for VOC emissions is satisfied.

{Use the following section for lean-burn engines ≥ 250 bhp:}
[For BACT Guideline 3.1.8:]
BACT Analysis for VOC Emissions:

5. BACT Analysis for VOC Emissions:

Volatile organic compounds (VOC) emissions are generated from the incomplete combustion of the fuel. Some VOCs are emitted from the crankcase of the engine as a result of piston ring blow-by.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies achieved in practice BACT for VOC emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) VOC emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas-fired engine or equal)

The SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies achieved in practice BACT for VOC emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

1) 90% VOC control efficiency catalyst (oxidation catalyst or equal)

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.8, X quarter 200X, identifies alternate basic equipment BACT for VOC emissions from lean-burn emergency natural gas IC engines ≥ 250 bhp as follows:

2) ≥ 50% VOC control efficiency catalyst (rich-burn engine with NSCR or equal)

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) 90% VOC control efficiency catalyst (oxidation catalyst or equal) (≈ 0.039 g/bhp-hr)
2) Alternate basic equipment - ≥ 50% VOC control efficiency catalyst (rich-burn engine with NSCR or equal)
3) VOC emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas-fired engine or equal)

d. Step 4 - Cost effectiveness analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

{If the applicant is proposing a 90% VOC control efficiency catalyst (oxidation catalyst or equal) for this application, use the following:}
The applicant is proposing a VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel. This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

{If the applicant is not proposing a 90% VOC control efficiency catalyst (oxidation catalyst or equal) for this application and the facility is a "small emitter", use the following:}
This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_X, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM_{10}, and SO_X]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

However, a cost effective analysis must be performed for the alternate basic equipment option.

District BACT policy demonstrates how to calculate the cost effectiveness of alternate basic equipment or process:

$CE_{alt} = (Cost_{alt} - Cost_{basic}) \div (Emission_{basic} - Emission_{alt})$

where,

CE_{alt} = the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced

$Cost_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$Cost_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$Emission_{basic}$ = the emissions from the proposed basic equipment, without BACT.

$Emission_{alt}$ = the emissions from the alternate basic equipment

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a rich-burn engine with NSCR or equal is/is not cost effective.

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

{If the applicant is <u>not proposing</u> a 90% VOC control efficiency catalyst (oxidation catalyst or equal) for this application and the facility <u>is not</u> a "small emitter", use the following:}

District BACT policy demonstrates how to calculate the cost effectiveness of alternate basic equipment or process:

$CE_{alt} = (Cost_{alt} - Cost_{basic}) \div (Emission_{basic} - Emission_{alt})$

where,

CE_{alt} = the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced

$Cost_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$Cost_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$Emission_{basic}$ = the emissions from the proposed basic equipment, without BACT.

$Emission_{alt}$ = the emissions from the alternate basic equipment

[Insert Cost Effective Analysis. Please discuss with your lead engineer for further instruction.]

Based on the preceding cost-effective analysis, a rich-burn engine with NSCR or equal is/is not cost effective.

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

e. Step 5 - Select BACT

{If the applicant is proposing a 90% VOC control efficiency catalyst (oxidation catalyst or equal) for this application or if a a 90% VOC control efficiency catalyst (oxidation catalyst or equal) is cost effective, use the following:}
BACT for VOC emissions from this lean-burn emergency standby natural gas IC engine ≥ 250 bhp is a 90% VOC control efficiency catalyst (oxidation catalyst or equal). The applicant has proposed to install a XXX bhp lean-burn emergency standby natural gas IC engine with a 90% VOC control efficiency catalyst (oxidation catalyst or equal); therefore BACT for VOC emissions is satisfied.

{if a a 90% VOC control efficiency catalyst (oxidation catalyst or equal) is not cost effective or the facility is a "small emitter", use the following:}
BACT for VOC emissions from this lean-burn emergency standby natural gas IC engine ≥ 250 bhp is having VOC emissions of ≤ 1.0 g/bhp-hr (lean-burn natural gas-fired engine or equal). The applicant has proposed to install a XXX bhp lean-burn emergency standby natural gas IC engine with VOC emissions of X.X g/bhp-hr; therefore BACT for VOC emissions is satisfied.

Appendix B
HRA Summary

Appendix C
SSPE1 Calculations

[Attach SSPE1 Calculations if applicable.]

Appendix D
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 - BE, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, $PE2_{quarterly}$ and $BE_{quarterly}$ can be calculated as follows:

Note: The following table divides column 2 by 4 with the results presented in column 3. After entering the data in column 2, highlight column 3 and press F9:

Quarterly Post Project Emissions		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO_X	0	0.0
SO_X	0	0.0
PM_{10}	0	0.0
CO	0	0.0
VOC	0	0.0

{For new units, use the following:}

$BE_{quarterly}$ = BE_{annual} ÷ 4 quarters/year
= 0 lb/year ÷ 4 qtr/year
= 0 lb/qtr (for all criteria pollutants)

{For modified units, use the following:}

Note: The following table divides column 2 by 4 with the results presented in the column 3. After entering the data in column 2, highlight column 3 and press F9:

Quarterly Baseline Emissions		
Pollutant	BE Total (lb/yr)	Quarterly BE (lb/qtr)
NO_X	0	0.0
SO_X	0	0.0
PM_{10}	0	0.0
CO	0	0.0
VOC	0	0.0

Note: The following table subtracts column 3 from column 2 with the results presented in column 4. After entering the data in columns 2 and 3, highlight column 4 and press F9:

QNEC			
Pollutant	Quarterly PE2 (lb/qtr)	Quarterly BE (lb/qtr)	QNEC (lb/qtr)
NO_X	0	0	0.0
SO_X	0	0	0.0
PM_{10}	0	0	0.0
CO	0	0	0.0
VOC	0	0	0.0

Appendix E
Draft ATC and Emissions Profile

ATC Conditions

[For ATC w/ COC, use the following two conditions:]

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]

2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

[For ATC w/o COC, use the following condition:]

3. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520]

[For all engines, use the following conditions:]

4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

6. {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]

7. {3404} This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

8. {4985} 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]

9. {4986} 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]

[If the engine powers a drinking water system, use the following three conditions in place of #6 from above and #21 (hours of operation) from below:]

10. {1346} This engine shall be used exclusively to operate a drinking water system [CH&SC 41701.6]

11. {3454} 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 2 or 40% opacity. [CH&SC 41701.6]

12. {3819} 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 either of the following limits: 30 minutes per week or 2 hours per month. [District Rule 4702 and CH&SC 41701.6]

[If the engine is required to be fired on PUC regulated natural gas, use the following condition:]

13. {3491} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]

[If the engine is required by BACT to have a PCV system or if the engine is already equipped with a PCV system, use the following condition:]

14. {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system which recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]

[Use the following special case BACT/DEL conditions as required:]

15. {3492} This IC engine shall be equipped with a three-way catalyst. [District Rule 2201]

16. {3493} This IC engine shall be equipped with a three-way catalyst and shall be fired on natural gas fuel only. [District Rule 2201]

17. {3494} This IC engine shall be fired on natural gas fuel only. [District Rule 2201]

Add the following condition if required by the RMR:

18. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]

[For an "emergency standby" engine being installed to power primary mechanical or an electrical generator during periods of unscheduled power outages beyond the control of the operator, use the following conditions, otherwise delete.]

19. {3405} 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]

20. {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]

21. {3806} 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 100 hours per calendar year. [District Rule 4702]

22. {4987} 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]

23. {3497} 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]

[If the engine is located in a remote location, use the following condition in place of #23 above:]

24. {3498} 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. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

[For an "emergency" engine being installed and operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood:]

25. {3806} 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 100 hours per calendar year. [District Rule 4702]

26. {3500} 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, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). 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]

27. {3497} 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]

[If the engine is located in a remote location, use the following condition in place of #27 above:]

28. {3498} 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. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

[If the engine is limited to operation of less than 24 hours/day, use the following condition:]

29. {edited 3398} Operation of this engine for all purposes combined shall not exceed XX hours per day. [District Rules 2201 and 4102]

[For all engines, use the following conditions:]

30. {edited 3501} Emissions from this IC engine shall not exceed any of the following limits: X.XX g-NOx/bhp-hr, X.XX g-PM10/bhp-hr, X.XX g-CO/bhp-hr, or X.XX g-VOC/bhp-hr. [District Rule 2201]

[If the facility is becoming a Major Source, use the following condition:]

31. {3487} This facility will have up to 12 months from the date of this Authority to Construct (ATC) issuance to either submit a Title V application or comply with District Rule 2530 - Federally Enforceable Potential to Emit. [District Rule 2520]