DRAFT

Engineering Evaluation Report
STACK Infrastructure
2001 Fortune Drive, San Jose, CA 95131
Facility ID 22974 (Legacy Site ID B8734)
Application No. 696975

BACKGROUND

STACK Infrastructure (STACK) is submitting this application for Authorities to Construct and/or Permits to Operate 39 standby diesel emergency generators for two new data centers and one office building in San Jose, CA. Each data center and the office building will have separate, distinct physical addresses and will operate as separate legal entities. STACK will construct, operate and own the three buildings under a condominium plan where each entity will be sold to specific customers when operational. A total of thirty-six 4,423 HP, two 1,474 HP, and one 315 HP diesel fired generator sets will be installed as follows:

Legal Entity Name	Address	Generator Sets
SI SVY01C, LLC	1849 Fortune Drive San Jose, CA 95131	Twenty-one (21) 4,423 HP (3 MW) One (1) 1,474 HP (1 MW)
SI SVY001D, LLC	2400 Ringwood Avenue San Jose, CA 95131	Fifteen (15) 4,423 HP (3 MW) One (1) 1,474 HP (1 MW)
SI SVY01F, LLC	2000 Trade Zone Boulevard San Jose, CA 95131	One (1) 315 HP (200 kW)

The three new buildings will be adjacent and contiguous to their existing site location at 2001 Fortune Drive in San Jose, CA and all are considered part of the same facility, as defined in Regulation 2-1-213.

The facility (Legacy Site ID B8734) has been operating under Facility ID 22974 since STACK Infrastructure began ownership in 2015. Prior to STACK Infrastructure, the facility was owned by Fortune Data Centers and operated under Facility ID 18734. STACK currently has a total of thirty existing emergency standby diesel generators and associated abatement equipment. The application history of the facility's current sources is provided below.

Table 1. Current Source Application History (Legacy Site ID: B8734)

Facility ID	Application Number	Source ID	Initial Permit Date
18734	17873	S-1 thru S-7	07/30/2008
18734	22239	S-8	09/28/2010
22974	26450	S-9 thru S-14	10/28/2014
22974	30793	S-15 thru S-34	05/25/2021

The maximum collective generating capacity of the proposed STACK project will not exceed 91 MW, although the collective nameplate capacity of the generators would exceed 91 MW. The generating capacity of the project exceeds the threshold that subjects facilities to California Energy Commission (CEC) requirements. The CEC is the lead agency for the project under the California Environmental Quality Act (CEQA). Under Docket Number 21-SPPE-02, the CEC granted a Small Power Plant Exemption (SPPE) to STACK on March 30, 2023. An Environmental Impact Report (EIR) was also prepared for this project.

In this application, STACK is applying for Authorities to Construct and Permits to Operate for the thirty-nine (39) diesel-fired engines powering the 39 backup generators. The new engines will be located adjacent to each building they are intended to serve. The proposed sources require Authorities to Construct and Permits to Operate per BAAQMD Regulation 2-1-301 and Regulation 2-1-302, respectively. Thirty-six (36) engines will support backup power requirements and are of identical make, model, model year, rated power output, fuel consumption rate, and EPA Engine Family. Additionally, each will be equipped with identical post-combustion control systems comprised of a combined Diesel Particulate Filter/Diesel Oxidation Catalyst (DPF/DOC) and Selective Catalytic Reduction (SCR). The remaining 3 are smaller generators and will be used to support other general building and life safety services. For all 39 proposed engines, the facility has accepted a non-emergency operation limit of 24 hours per year, per engine. The sources and abatement devices covered by this application for an authority to construct/permit to operate are identified as follows:

ENGINE TYPE #1 (Count: 36)

(at SVY01C): **S-35 → S-55;** *and* (at SVY01D): **S-57 → S-71:**	**Emergency Standby Diesel Engine-Genset (SVY01C)** **Emergency Standby Diesel Engine-Genset (SVY01D)** **Make: Caterpillar; Model: C175-16, Model Year: 2023** **EPA Engine Family: PCPXL106.NZS** **4,423 bhp, 28.962 MMBTU/hr**
	Abated by
A-135 → A-155[1]; and **A-157 → A-171:**	**Diesel Particulate Filter/Diesel Oxidation Catalyst (DPF/DOC)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
	And
A-235 → A-255[2]: **A-257 → A-271:**	**Selective Catalytic Reduction (SCR)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**

ENGINE TYPE #2 (Count: 2):

(at SVY01C): **S-56;** *and* (at SVY01D): **S-72:**	**Emergency Standby Diesel Engine-Genset (SVY01C)** **Emergency Standby Diesel Engine-Genset (SVY01D)** **Make: Caterpillar; Model: C32, Model Year: 2023** **EPA Engine Family: PCPXL32.0NZS** **1,474 bhp, 9.796 MMBTU/hr**
	Abated by
A-156 & A-172[3]:	**Diesel Particulate Filter/Diesel Oxidation Catalyst (DPF/DOC)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
	And

[1] *The thirty-six (36) DPF/DOCs abating S-35 through S-55 and S-57 through S-71 are identical and will be assigned the abatement device IDs from A-135 through A-155 and A-157 through A-171.*

[2] *The thirty-six (36) SCRs abating S-35 through S-55 and S-57 through S-71 are identical will be assigned the associated abatement device IDs from A-235 through A-255 and A-257 through A-271.*

[3] *The two (2) DPF/DOCs abating S-56 and S-72 are identical and will be assigned the abatement device IDs from A-156 and A-172.*

A-256 → A-272[4]: **Selective Catalytic Reduction (SCR)**
Make: Safety Power, Inc., Model: ecoCUBE Series 5

ENGINE TYPE #3 (Count: 1):

(at SVY01F): **S-73:** **Emergency Standby Diesel Engine-Genset (SVY01F)**
Make: John Deere; Model: 6068HFG85A, Model Year: 2023
EPA Engine Family: PJDXL13.5103
315 bhp, 2.096 MMBTU/hr

Abated by

A-73 **Diesel Particulate Filter (DPF)**
Make: Johnson Matthey Model: JM-CRT(+)-2-N-CS-BITO-8/8
CARB Executive Order: DE-08-009-12

This evaluation report will discuss compliance of the proposed project with all applicable rules and regulations.

EMISSIONS CALCULATIONS & SUMMARY

The criteria pollutants are nitrogen oxides (NOx), carbon monoxide (CO), precursor organic compounds (POC) from unburned diesel fuel, sulfur dioxide (SO_2) and particulate matter (PM_{10} and $PM_{2.5}$). All of these pollutants are briefly discussed on the Air District's web site at www.baaqmd.gov.

Annual Criteria Pollutant Emissions:

Of the thirty-nine (39) proposed engines, there are three engine types: thirty-six (36) are 4,423 HP, two are 1,474 HP, and one is 315 HP. Engines with the same HP are identical and are subject to the same operational limitations, therefore each proposed engine type has identical data, emission factors, and emission rates.

Table 2. Engine Data for S-35 through S-73

Source ID	Non-Emergency Hrs/year	Output rating for full-load, standby operation (bhp)	Engine Displacement	EPA Engine Family
S-35 *through* S-55 and S-57 through S-71	24	4,443	84.7 L ÷ 16 = 5.29 L/cylinder	PCPXL106.NZS
S-56 and S-72	24	1,474	32.1 L ÷ 12 = 2.68 L/cylinder	PCPXL32.0NZS
S-73	24	315	6.80 L ÷ 6 = 1.13 L/cylinder	PJDXL13.5103

[4] *The two (2) SCRs abating S-56 and S-72 are identical will be assigned the associated abatement device IDs from A-156 and A-172.*

Table 3a. Emission Factor Assumptions for S-35 thru S-55 and S-57 thru S-71

Pollutant	Unabated Emission Factor (2)(3) (g/kW-hr)	Unabated Emission Factor (4)(5) (g/bhp-hr)	Abatement Device Efficiency (6) DRE %	Abated Emission Factor (7) (g/bhp-hr)
NOx	5.32	3.97	87.41	0.50
CO	3.5	2.60	0.0	2.60
POC (NMHC)	0.48	0.358	60.89	0.14
$PM_{10}/PM_{2.5}$ (1)	0.11	0.0820	75.61	0.02
SO_2	-	0.0055	0.0	0.0055

Table 3b. Emission Factor Assumptions for S-56 and S-72

Pollutant	Unabated Emission Factor (2)(3) (g/kW-hr)	Unabated Emission Factor (4)(5) (g/bhp-hr)	Abatement Device Efficiency (6) DRE %	Abated Emission Factor (7) (g/bhp-hr)
NOx	5.01	3.74	86.63	0.50
CO	3.5	2.60	0.0	2.60
POC (NMHC)	0.10	0.0746	0.0	0.0746
$PM_{10}/PM_{2.5}$ (1)	0.06	0.0447	0.0	0.0447
SO_2	-	0.0055	0.0	0.0055

Table 3c. Emission Factor Assumptions for S-73

Pollutant	Unabated Emission Factor (2)(3) (g/kW-hr)	Unabated Emission Factor (4)(5) (g/bhp-hr)	Abatement Device Efficiency (6) DRE %	Abated Emission Factor (7) (g/bhp-hr)
NOx	3.31	2.47	0.0	2.47
CO	0.6	0.447	0.0	2.60
POC (NMHC)	0.11	0.0820	0.0	0.0746
$PM_{10}/PM_{2.5}$ (1)	0.10	0.0746	85.0	0.0112
SO_2	-	0.0055	0.0	0.0055

Notes/Basis:

(1) *It is assumed that all PM emissions are comprised of PM_{10} and $PM_{2.5}$.*

(2) *Unabated emission factors for NOx, POC (NMHC), and PM are from the US EPA Annual Certification Database for Vehicles, Engines, and Equipment: Nonroad Compression Ignition Engines, NRCI Certification Data (Model Years: 2011-Present.xlsx), Certification Level Steady-State Discrete Modal Test Results for the EPA Engine Family listed in Table 2.* https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment

(3) *The Unabated Emission factor for CO is assumed to be the Tier 4 limit of 3.5 g/kW-hr (2.6 g/bhp-hr).*

(4) *Emission factor for SO_2 is from EPA AP-42, Chapter 3, Table 3.4.1:*

*SO_2: 8.09E-03 * (Max Sulfur content of R100 & ULSD: 15 ppm) = 8.09E-03 * 0.0015 = 1.21E-05 lb/bhp-hr;*
*(1.21E-05 lb/bhp-hr) * (454 g/lb) =* ***0.0055 g/bhp-hr***

(5) *Assume 1.341 hp/kw conversion factor.*

(6) *For S-35 through S-55 and S-57 through S-71, the abatement efficiencies for NOx, POC, and $PM_{10/2.5}$ are back-calculated such that the abated emission factor is equivalent to the respective Tier 4 limits of 0.5, 0.14, and 0.02 g/bhp-hr, respectively. No abatement is assumed for CO and SO_2. For S-56 and S-72, the abatement efficiencies for NOx are back-calculated such that the abated emission factor is equivalent to the respective Tier 4 limits of 0.5 g/bhp-hr. DPF is not CARB verified, so 0% abatement assumed for PM. Also, no abatement is assumed for CO, POC, and SO_2. For S-73, DPF has Level 3+ verification by CARB Executive Order: DE-08-009, which certifies that the DPF can reduce PM by at least 85%.*

(7) *Abated emission factor = Unabated emission factor * (1 – Abatement Device Efficiency DRE %)*

Table 4a. Calculated Annual Emissions Per Engine for S-35 through S-55 and S-57 through S-71

Per Engine																	
NOx	=	(	0.50	g/hp-hr)	(	4423	hp)	(	24	hr/yr)	(lb/453.7g)	=	116.980	lb/yr	=	0.058	TPY
CO	=	(	2.60	g/hp-hr)	(	4423	hp)	(	24	hr/yr)	(lb/453.7g)	=	608.293	lb/yr	=	0.304	TPY
POC	=	(	0.140	g/hp-hr)	(	4423	hp)	(	24	hr/yr)	(lb/453.7g)	=	32.754	lb/yr	=	0.016	TPY
$PM_{10}/PM_{2.5}$	=	(	0.020	g/hp-hr)	(	4423	hp)	(	24	hr/yr)	(lb/453.7g)	=	4.679	lb/yr	=	0.002	TPY
SO_2	=	(	0.0055	g/hp-hr)	(	4423	hp)	(	24	hr/yr)	(lb/453.7g)	=	1.288	lb/yr	=	0.001	TPY

Table 4b. Calculated Annual Emissions Per Engine for S-56 and S-72

Per Engine																	
NOx	=	(	0.50	g/hp-hr)	(	1474	hp)	(	24	hr/yr)	(lb/453.7g)	=	38.984	lb/yr	=	0.019	TPY
CO	=	(	2.60	g/hp-hr)	(	1474	hp)	(	24	hr/yr)	(lb/453.7g)	=	202.719	lb/yr	=	0.101	TPY
POC	=	(	0.0746	g/hp-hr)	(	1474	hp)	(	24	hr/yr)	(lb/453.7g)	=	5.816	lb/yr	=	0.003	TPY
$PM_{10}/PM_{2.5}$	=	(	0.0447	g/hp-hr)	(	1474	hp)	(	24	hr/yr)	(lb/453.7g)	=	3.485	lb/yr	=	0.002	TPY
SO_2	=	(	0.0055	g/hp-hr)	(	1474	hp)	(	24	hr/yr)	(lb/453.7g)	=	0.429	lb/yr	=	0.000	TPY

Table 4c. Calculated Annual Emissions for S-73

Per Engine																	
NOx	=	(	2.47	g/hp-hr)	(	315	hp)	(	24	hr/yr)	(lb/453.7g)	=	41.156	lb/yr	=	0.021	TPY
CO	=	(	0.45	g/hp-hr)	(	315	hp)	(	24	hr/yr)	(lb/453.7g)	=	7.448	lb/yr	=	0.004	TPY
POC	=	(	0.082	g/hp-hr)	(	315	hp)	(	24	hr/yr)	(lb/453.7g)	=	1.366	lb/yr	=	0.001	TPY
$PM_{10}/PM_{2.5}$	=	(	0.011	g/hp-hr)	(	315	hp)	(	24	hr/yr)	(lb/453.7g)	=	0.187	lb/yr	=	0.000	TPY
SO_2	=	(	0.0055	g/hp-hr)	(	315	hp)	(	24	hr/yr)	(lb/453.7g)	=	0.092	lb/yr	=	0.000	TPY

Table 5 below summarizes the combined annual emissions from all thirty-nine (39) proposed engines.

Table 5. Combined Annual Emissions for S-35 through S-73

Pollutant	Annual Emissions (lbs/year)	Annual Emissions (tons/year)
NOx	4330.387	2.165
CO	22311.45	11.156
POC	1192.153	0.596
$PM_{10}/PM_{2.5}$	175.608	0.088
SO_2	47.324	0.024

Maximum Daily Criteria Pollutant Emissions:

Daily emissions are calculated to establish whether a source triggers the requirement for Best Available Control Technology (BACT) (10 lb/highest day total source emissions for any BACT pollutant). A full 24-hour day is assumed since no daily limits are imposed on intermittent and unexpected operations. For $PM_{10}/PM_{2.5}$, unabated emission factors are used to calculate maximum daily emissions at each engine. The tables below show the calculated maximum daily emissions for each new source proposed in this application.

Table 6a. Calculated Daily Emissions Per Engine for S-35 through S-55 and S-57 through S-71

Per Engine														
NOx	=	(	0.50	g/hp-hr)	(	4423	hp)	(	24	hr/day)	(lb/453.7g)	=	116.980	lb/day
CO	=	(	2.60	g/hp-hr)	(	4423	hp)	(	24	hr/day)	(lb/453.7g)	=	608.293	lb/day
POC	=	(	0.140	g/hp-hr)	(	4423	hp)	(	24	hr/day)	(lb/453.7g)	=	32.754	lb/day
$PM_{10}/PM_{2.5}$	=	(	0.082	g/hp-hr)	(	4423	hp)	(	24	hr/day)	(lb/453.7g)	=	19.191	lb/day
SO_2	=	(	0.0055	g/hp-hr)	(	4423	hp)	(	24	hr/day)	(lb/453.7g)	=	1.288	lb/day

Table 6b. Calculated Daily Emissions Per Engine for S-56 and S-72

Per Engine														
NOx	=	(	0.50	g/hp-hr)	(	1474	hp)	(	24	hr/day)	(lb/453.7g)	=	38.984	lb/day
CO	=	(	2.60	g/hp-hr)	(	1474	hp)	(	24	hr/day)	(lb/453.7g)	=	202.719	lb/day
POC	=	(	0.0746	g/hp-hr)	(	1474	hp)	(	24	hr/day)	(lb/453.7g)	=	5.816	lb/day
$PM_{10}/PM_{2.5}$	=	(	0.0447	g/hp-hr)	(	1474	hp)	(	24	hr/day)	(lb/453.7g)	=	3.489	lb/day
SO_2	=	(	0.0055	g/hp-hr)	(	1474	hp)	(	24	hr/day)	(lb/453.7g)	=	0.429	lb/day

Table 6c. Calculated Daily Emissions Per Engine for S-73

Per Engine														
NOx	=	(	2.47	g/hp-hr)	(	315	hp)	(	24	hr/day)	(lb/453.7g)	=	41.156	lb/day
CO	=	(	0.45	g/hp-hr)	(	315	hp)	(	24	hr/day)	(lb/453.7g)	=	7.448	lb/day
POC	=	(	0.082	g/hp-hr)	(	315	hp)	(	24	hr/day)	(lb/453.7g)	=	1.366	lb/day
$PM_{10}/PM_{2.5}$	=	(	0.075	g/hp-hr)	(	315	hp)	(	24	hr/day)	(lb/453.7g)	=	1.243	lb/day
SO_2	=	(	0.0055	g/hp-hr)	(	315	hp)	(	24	hr/day)	(lb/453.7g)	=	0.092	lb/day

Secondary Emissions:

Ammonia (NH_3) is used as a reagent in Selective Catalytic Reduction (SCR) units to convert NOx to nitrogen gas (N_2) and water (H_2O). SCRs can emit NH_3 secondarily when unreacted NH_3 "slips" through and enters the exhaust stream, where it can then reach the atmosphere. Because ammonia is a toxic air contaminant (TAC), these secondary emissions must be evaluated to determine compliance with Regulation 2, Rule 5.

The following are the parameters and methods used to calculate ammonia emissions from the proposed sources.

Table 7a. Input Parameters for Ammonia Slip (per engine, for S-35 through S-55 and S-57 through S-71)

Parameter	*Symbol*	*Value*	*Units*	*Notes/Basis*
Molar Weight, NH_3:	MW_{NH3}	17.03	*lb/lbmol*	*Weight of 1 lbmol NH_3*
Molar Volume, Air:	$V_{n,air}$	386.8	*scf/lbmol*	*Volume of 1 lbmol of Air at standard temperature and pressure (T = 70°F, P = 1 atm)*
NH_3 Slip, Volumetric Concentration: (@ 15% O_2)	-	10	*ppmv*	*Maximum for standard permit conditions (SCR data sheet lists 8 ppmv @ 15% O_2)*
NH_3 Slip, Volumetric Concentration: (@ 0% O_2)	-	35.42	*ppmv*	*Corrected to 0% O_2*
NH_3 Slip, Mole Fraction:	$X_{i,NH3}$	3.542E-05	-	*lbmol NH_3 per lbmol Air (@ 0% O_2)*
Actual Exhaust Flow Rate:	-	25,620.0	*acfm*	*Engine performance data sheet (at 100% load)*
Actual Exhaust Temperature:	-	891.9	*°F*	*Engine performance data sheet (at 100% load)*
	-	1,351.57	*°R*	*Calculated*
Exhaust Water (H_2O) Content:	-	7.0	*%*	*Engine performance data sheet (at 100% load)*
Exhaust Oxygen (O_2) Content:	-	9.6	*%*	*Engine performance data sheet (at 100% load)*
Exhaust Flow Rate: (Dry basis, standard conditions)	$Q_{s,dry}$	4,224.3	*dscfm*	*Corrected to 0% O_2, 0% H_2O, and standard temperature and pressure (T = 70°F, P = 1 atm)*

Table 7b. Input Parameters for Ammonia Slip (per engine, for S-56 and S-72)

Parameter	*Symbol*	*Value*	*Units*	*Notes/Basis*
Molar Weight, NH_3:	MW_{NH3}	17.03	*lb/lbmol*	*Weight of 1 lbmol NH_3*
Molar Volume, Air:	$V_{n,air}$	386.8	*scf/lbmol*	*Volume of 1 lbmol of Air at standard temperature and pressure (T = 70°F, P = 1 atm)*
NH_3 Slip, Volumetric Concentration: (@ 15% O_2)	-	10	*ppmv*	*Maximum for standard permit conditions (SCR data sheet lists 8 ppmv @ 15% O_2)*
NH_3 Slip, Volumetric Concentration: (@ 0% O_2)	-	35.42	*ppmv*	*Corrected to 0% O_2*

NH_3 Slip, Mole Fraction:	$X_{i,NH3}$	3.542E-05	-	*lbmol NH_3 per lbmol Air (@ 0% O_2)*
Actual Exhaust Flow Rate:	-	8,115.3	*acfm*	*Engine performance data sheet (at 100% load)*
Actual Exhaust Temperature:	-	892.5	*°F*	*Engine performance data sheet (at 100% load)*
	-	1,351.57	*°R*	*Calculated*
Exhaust Water (H_2O) Content:	-	8.55	*%*	*Engine performance data sheet (at 100% load)*
Exhaust Oxygen (O_2) Content:	-	10.0	*%*	*Engine performance data sheet (at 100% load)*
Exhaust Flow Rate: (Dry basis, standard conditions)	$Q_{s,dry}$	4,224.3	*dscfm*	*Corrected to 0% O_2, 0% H_2O, and standard temperature and pressure (T = 70°F, P = 1 atm)*

Using the above parameters, the following equation is used to calculate hourly ammonia emissions:

$$\boldsymbol{Hourly\ Emission\ Rate}\left(\frac{\boldsymbol{lbs\ NH3}}{\boldsymbol{hour}}\right) = X_{i,NH3} * \ Q_{s,dry} * \left(\frac{60\ min}{1\ hr}\right) \div V_{n,air} * \ MW_{NH3}$$

The annual emission rate of ammonia is calculated by multiplying the hourly emission rate by the annual limit of non-emergency operation for the engines (24 hours/year). A summary of the hourly and annual emission rates is provided below, per engine.

Table 8a. Hourly & Annual Ammonia Emission Rates (per engine, for S-35 through S-55 and S-57 through S-71)

Pollutant	Hourly Emission Rate (lbs/hour)	Annual Emission Rate (lbs/year)
Ammonia (NH_3)	0.472	11.3

Table 8b. Hourly & Annual Ammonia Emission Rates (per engine, for S-56 and S-72)

Pollutant	Hourly Emission Rate (lbs/hour)	Annual Emission Rate (lbs/year)
Ammonia (NH_3)	0.142	3.41

CUMULATIVE INCREASE, POTENTIAL TO EMIT, AND OFFSETS

Cumulative Increase:

Cumulative Increase is defined as the sum of all emissions increases authorized by authorities to construct and permits to operate issued to a facility, less any onsite emission reduction credits (emission offsets), since the applicable cumulative increase baseline date, which is April 5, 1991, for POC, NOx, SO_2, PM_{10}, and CO, and August 31, 2016, for $PM_{2.5}$. The cumulative increase for the facility is summarized in the table below.

Table 9. Cumulative Increase for Facility ID 22974

Pollutant	Current(1) (ton/year)	Application Increase (ton/year)	New Total (ton/year)

NOx	16.051	2.165	18.216
CO	3.416	11.156	14.572
POC	1.192	0.596	1.788
PM_{10}	0.047	0.088	0.135
$PM_{2.5}$	0.047	0.088	0.135
SO_2	0.023	0.024	0.047

Notes:

(1) Current cumulative increase for all pollutants taken from the final engineering evaluation for AN 30793.

Potential to Emit (PTE):

In accordance with District Policy[5], the standard potential to emit (PTE) for emergency engines is calculated using the annual non-emergency operating hours plus an assumed 100 hours/year of emergency operation.

The assumption of 100 hours per year of emergency operation is used to determine the applicability of certain District permitting regulations, such as New Source Review and Title V Major Facility Review. The District Policy is not used to determine the quantity of emission offsets required for a project that triggers New Source Review or for PSD. It is also not applicable for the purposes of the Toxics New Source Review requirements of District Reg. 2-5 (per Regulation 2-5-111).

Therefore, the PTE for the emergency engines in this application is based on 124 hours/year engine operation (24 hr/yr non-emergency plus 100 hr/yr emergency purposes).

The table below shows the calculated facility-wide PTE based on District Policy.

Table 10. Facility-Wide Potential to Emit for Facility ID 22974
(Per District Policy: Calculating PTE for Emergency Backup Power Generators)

Pollutant	Current PTE(1) (ton/year)	AN 696975 PTE Increase (ton/year)	New Total PTE (ton/year)
NOx	34.472	11.187	45.659
CO	15.915	57.638	73.553
POC	3.266	3.080	6.346
PM_{10}	0.205	0.454	0.659
$PM_{2.5}$	0.205	0.454	0.659
SO_2	0.096	0.122	0.218

Notes:

(1) Current PTE for all pollutants taken from the final engineering evaluation for AN 30793, which was calculated from existing engine horsepower ratings, and PTE hours per District Policy.

Offsets:

5 *BAAQMD Policy: Calculating Potential to Emit for Emergency Backup Power Generators. Approval date June 3, 2019. (Referred to as "District Policy" in this engineering evaluation).*

Regulation 2, Rule 2 establishes emission offset requirements for POC, NO_x, $PM_{2.5}$, PM_{10}, and SO_2. Per Section 2-2-302, if a facility will have a PTE more than 10 tons per year but less than 35 tons per year of NO_x or POC after the new or modified source is constructed, offsets must be provided at a 1:1 ratio for any un-offset cumulative increase in emissions at the facility. These offsets shall be provided by the District's Small Facility Banking Account (SFBA) unless the applicant owns offsets. If the facility will have a PTE of more than 35 tons per year of NOx or POC after the new or modified source is constructed, offsets must be provided by the facility at a 1.15:1 ratio for any un-offset cumulative increase in emissions at the facility. Additionally, Section 2-2-303 establishes emission offset requirements from new or modified sources located at a facility with the PTE of 100 tons/year for $PM_{2.5}$, PM_{10}, or SO_2.

As shown in the facility-wide PTE summary (Table 10), calculated per District Policy, the addition of S-35 through S-73 does not bring the facility's PTE of POC, $PM_{2.5}$, PM_{10}, and SO_2 to the respective thresholds that trigger offset requirements. However, the PTE of NOx exceeds 35 tons per year (TPY), which triggers the NOx offset requirements of Section 2-2-302.2.2. Therefore, the facility is required to purchase NOx offsets to refund the District Small Facility Bank for the NOx offsets of 16.051 tons per year previously provided under applications 17873 (4.781 TPY), 22239 (0.686 TPY), 26450 (1.304 TPY), and 30793 (9.280) at a 1 to 1 ratio and to offset the NOx emission increases for S-35 through S-73 resulting from 24 hours per year operation at a ratio of 1:15:1. The required amount of offsets are summarized below in Table 11.

Table 11. Offsets Requirements from Facility ID 22974

Pollutant	**Cumulative Increase (TPY) offset by Small Facility Bank**	**Cumulative Increase (TPY) from AN 696975 (see Table 9)**	**Offset Ratio (Reg 2-2-302.2.2)**	**Amount to Offset (TPY)**
NOx	16.051		1:1	16.051
		2.165	1.15:1	2.490
			TOTAL	18.541

Before the District issues any Authority to Construct under this application, the facility must surrender an BAAQMD banking certificate that has at least 18.541 TPY of NOx offset credits.

STATEMENT OF COMPLIANCE

Regulation 2 - Permits, Rule 1 – General Requirements

CEQA Requirements (Section 2-1-310 and 426)

In accordance with 2-1-310.1, all proposed new and modified sources for which an Authority to Construct must be obtained from the BAAQMD shall be reviewed in accordance with the requirements of CEQA by a lead agency. Per 2-1-310.2, the issuance of an Authority to Construct or Permit to Operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA. In addition, per 2-1-310.3, the APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all the requirements of CEQA have been satisfied.

The California Energy Commission (CEC) was the lead agency for this project. The CEC's consideration of the project included an evaluation of the facility's application for a Small Power Plant Exemption (SPPE) and of the Final Environmental Impact Report (FEIR) that was prepared for the project. The CEC certified the FEIR and approved STACKs's Small Power Plant Exemption (SPPE) on April 12, 2023. The CEC filed a Notice of Determination on April 13, 2024.

The Air District, as a responsible agency for this facility, has reviewed and considered the CEC's FEIR and supporting environmental analyses. In addition to mitigation measures, the applicant agreed to limit reliability testing to no more than one generator at a time testing no more than 8 generators on any given day, and only perform reliability testing to a daily 12-hour period between 7:00 a.m. and 7:00 p.m. daily as permit conditions from the Air District. These reliability testing limits were used to conduct the required modeling analysis in the FEIR. The Air District will include these limits in the permit conditions for S-35 through S-73. Based on this review, the Air District has determined that with the mitigation measures imposed by the CEC, there will be no significant environmental impacts. As the project will not have any significant impacts, the Air District has not imposed any mitigation measures (beyond the conditions the Air District has imposed to ensure compliance with air quality regulations) and has therefore not adopted a mitigation monitoring plan or program.

Public Notice (Section 2-1-412)

A new or modified source located (1) within 1,000 feet of the outer boundary of a K-12 school site which results in the increase in emissions of a toxic air contaminant in Table 2-5-1 of *Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants* or (2) within an Overburdened Community (OBC) as defined in Regulation 2-1-243 that requires a Health Risk Assessment (HRA) pursuant to Regulation 2-5-401 shall prepare and distribute a public notice in accordance with subsections 412.1 and 412.2 of *Regulation 2, Rule 1 General Requirements*.

This application proposes a new source of TACs and requires an HRA, and it is located within 1,000 feet of the outer boundary of the nearest K-12 school with more than 12 children enrolled (Mabel Mattos Elementary School located at 1750 McCandless Drive, Milpitas, CA 95035), but is it not located within an OBC. The public notification requirements of Section 2-1-412 are triggered.

Regulation 2 - Permits, Rule 2 – New Source Review

Best Available Control Technology Requirement (Section 2-2-301)

In accordance with Regulation 2-2-301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2, PM_{10}, or $PM_{2.5}$.

Based on the emission calculations shown in Tables 6a, 6b, and 6c, BACT is triggered for the proposed 36-4,423 HP engines (S-35 through S-55 and S-57 through S-71) for NOx, POC, CO, and PM_{10}/$PM_{2.5}$, for the two 1,474 HP engines (S-56 and S-72) for NOx and CO, and for the one 316 HP engine (S-73) for NOx because the maximum daily emissions exceed 10 lbs/day/source for those pollutants.

Per Air District Regulation 2-2-202, BACT is defined as the most stringent emissions limitation, control device, or control technique that (1) has been achieved in practice at other similar sources and/or (2) is technologically feasible and cost-effective. To determine what level of control constitutes BACT for these emergency standby diesel engines, the BAAQMD reviewed available control technologies that can be effective at controlling NOx, POC, CO, and $PM_{10}/PM_{2.5}$ from these sources.

<u>*Control Technology Review*</u>

Several control technologies can reduce NOx, POC, CO, and $PM_{10}/PM_{2.5}$emissions from emergency backup diesel engines. These technologies have been divided into three categories: Clean Fuels, Combustion Technologies, and Post-Combustion Technologies.

Clean Fuel Technology

The use of diesel fuel with a low nitrogen content reduces the amount of NOx formed during combustion. The less nitrogen available in the fuel, the less that can be converted to NOx upon combustion. Diesel fuel producers are not required to remove nitrogen from the fuel specifically for NOx reduction purposes. But they are required to remove sulfur to comply with regulatory mandates, and the hydro-treating technique they use to remove the sulfur also removes most of the nitrogen. As a result, using ultra-low-sulfur diesel (ULSD) fuel will provide benefits in reducing NOx emissions as well as reducing sulfur dioxide emissions. The United States Department of Energy (DOE) Alternative Fuels Data Center states that commercial production of Renewable Diesel undergoes the traditional hydrotreating process performed by petroleum diesel refineries[6]. ULSD fuel, or equivalents like Renewable Diesel, are required to be used by the California Air Resources Board (CARB) and is therefore achieved in practice for these engines.

Combustion Technologies

NOx, CO, and POC emissions can be minimized by optimizing the engines' combustion process using techniques such as injection timing retard, preignition chamber combustion, air-to-fuel ratio adjustments, and derating. These combustion characteristics are determined by the design of the engine, which is dictated by the manufacturer and cannot be controlled by the end user. The end user can reduce emissions by using the cleanest engines available, however. Engines are certified to meet progressively more stringent emissions performance standards using EPA's "Tier" system, with higher-tier engines representing more stringent levels of emissions control. For the size of engines that will be used for this project, the most stringent level of emissions control that can be achieved using combustion controls is Tier 2.[7] The use of Tier 2 engines is achieved in practice.

Post-Combustion Technologies

Currently, the most effective and prevalent post combustion technologies used to abate NOx, CO, and POC rely on the use of catalysts. For NOx reduction, catalytic technology can come in the form of a selective catalytic reduction unit, lean-NOx catalyst, or NOx adsorber. For CO and POC, reduction is typically achieved through an oxidation catalyst. For each of these technologies, the catalyst is used to lower the heat of reaction that is required for the breakdown and/or conversion of the target pollutants. For PM, the most effective and prevalent post combustion technologies used is diesel particulate filter. For larger engines with a rated power output exceeding 1,000 bhp, the use of post-combustion control technologies is also achieved in practice. Other facilities operating similar emergency standby engines have achieved emission rates equivalent to EPA's Tier 4 standards, which are the most stringent standards achievable by any engines that are available

[6] *U.S. Dept. of Energy Alternative Fuels Data Center, Renewable Diesel:* *https://afdc.energy.gov/fuels/renewable_diesel.html#:~:text=Fewer%20emissions%E2%80%94an%20NREL%20study,when%20compared%20with%20petroleum%20diesel.*

[7] *EPA's diesel emission tiers range from Tier 0 through Tier 4. The Tier 4 standards require catalytic control devices, which are addressed below. For diesel engines over 750 horsepower, there are no Tier 3 standards. The next most stringent set of standards for this size category after Tier 2 is Tier 4, which requires catalytic control devices. See California Air Resources Board, Non-Road Diesel Engine Certification Tier Chart, available at: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart-pdf. The most stringent tier that can be achieved with combustion controls only is therefore Tier 2 for this size category.*

on the market today. The use of post-combustion technologies to achieve EPA Tier 4 emission standards is achieved in practice.

BACT Analysis for S-35 through S-56 and S-57 through S-72

The 36-4,423 HP proposed engines are identical and have identical post-combustion control technologies. Similarly, the two-1,474 HP proposed engines are identical and have identical post-combustion control technologies. Therefore, the following BACT analysis applies to all 38 proposed engines.

S-35 through S-56 and S-57 through S-72 are emergency standby engines with a rated power output exceeding 1,000 bhp. Post-combustion control technologies have been achieved in practice for emergency standby engines of this power class. Other facilities operating similar emergency backup engines have achieved emissions rates equivalent to EPA's Tier 4 standards, which are the most stringent standards achievable by any engines that are available on the market today. These control technologies are therefore required as BACT. S-35 through S-56 and S-57 through S-72 will be required to use ULSD fuel. Additionally, these engines will be required by BAAQMD permit conditions to utilize post-combustion technologies to meet the EPA Tier 4 emissions standards for the applicable pollutants. Therefore, S-35 through S-56 and S-57 through S-72 comply with the BACT requirements under Regulation 2-2-301 for all applicable pollutants.

According to the emission data submitted to EPA for the engine family of the 36 identical 4,423 HP engines and two identical 1,474 HP engines, and the expected abatement efficiencies of the post-combustion control devices, the abated NOx, POC, CO, and PM emission rates comply with the applicable BACT emission limits shown in Table 12 below. However, because the engines of S-35 through S-55 and S-57 through S-71 are not certified by EPA to meet the Tier 4 standards for NOx, POC, or PM and the engines for S-56 and S-72 are not certified by EPA to meet the Tier 4 standard for NOx, source testing will be required to verify compliance. To prevent engine tuning to reduce NOx emissions at the expense of increasing CO emissions, source testing will also be required for CO. These source testing requirements will be outlined in the permit conditions for S-35 through S-56 and S-57 through S-72.

Table 12a. BACT Analysis Summary:
S-35 through S-56 and S-57 through S-72

BACT Pollutant Triggered	BACT/Tier 4 Limit for Engines HP > 1,000 (g/bhp-hr)	S-35 through S-55 and S-57 and S-71 Emission Rates per Engine (2) (g/bhp-hr)	S-56 and S-72 Emission Rates per Engine (2) (g/bhp-hr)
NOx	0.5	0.5	0.5
CO (1)	2.6	1.12	0.52
POC (3)	0.14	0.14	N/A
PM$_{10}$/PM$_{2.5}$ (3)	0.02	0.02	N/A

Notes:
(1) The EPA certified emission factor for CO is less than 2.6 g/bhp-hr for all 38 engines, but the engines will only be required to verify that they meet the Tier 4 standard of 2.6 g/bhp-hr for CO as BACT limit.
(2) Given emission rates are after abatement except for CO.
(3) Note that S-56 and S-72 do not trigger BACT for POC or PM$_{10}$/PM$_{2.5}$.

BACT Analysis for S-73

S-73 is an emergency standby engine with a rated power output between 300 and 600 HP. Other facilities operating similar emergency backup engines have achieved emissions rates equivalent to

EPA's Tier 3 standards. To achieve a Tier 4 NOx emission level of 0.5 g/bhp-hr would require add-on controls.

Sacramento Metro Air Quality Management District (SMAQMD) conducted a cost effectiveness analysis for SCR and DPF abatement devices retrofitted on standby diesel engines greater than 50 hp. The NOx emission reduction target used in the study is equivalent to CARB ATCM Section 93115 Table 4 for prime diesel engines manufactured 2015 or after. The target NOx emission rate is determined to be 0.5 g/bhp-hr for this application.

Table 12b. SMAQMD Summary of Annualized Cost Effectiveness

Cost-Effectiveness Associated with the Application of DPF and SCR on Emergency Standby Engines (50 hours/year)							
Regulatory Scenario			HP Range				
			50-174	175-749	750-1,206	1,207-1,999	>2,000
	Average Horsepower:		112	462	978	1604	2630
Scenario 1: DPF Retrofit of Tier 2/3 engine	Cost Effectiveness ($/ton)	PM	$660,000	$662,000	$658,000	$656,000	$656,000
		NOx	N/A	N/A	N/A	N/A	N/A
Scenario 2: DPF/SCR Retrofit of Tier 2/3 engine	Cost Effectiveness ($/ton)	PM	$682,000	$684,000	$682,000	$680,000	$678,000
		NOx	$110,000	$108,000	$66,000	$68,000	$68,000
Scenario 3: Tier 4 Final engine	Cost Effectiveness ($/ton)	NOx	$340,000	$260,000	$140,000	$140,000	$100,000

From SMAQMD BACT Clearinghouse Determination No. 172: IC Engine Compression-Standby

Per the BAAQMD BACT Workbook, cost-effectiveness for NOx is defined as less than or equal to $17,500 per ton of pollutant reduced. As shown in Table 12b, SCR option exceeds the maximum cost effectiveness threshold at $110,000 per ton for Tier 2/3 engines. BACT (1) for NOx is, thus, not cost effective for S-73. Therefore, BACT (2) will apply for S-73 NOx emissions. The BACT (2) standard for NOx is defined as 2.85 g/bhp-hr. S-73 satisfies NOx BACT (2).

Table 4. Comparison with BACT Limits for S-73

Pollutant	EPA Certified Emission Factor	BACT(2) Standard*
NOx	2.47 g/bhp-hr	2.85 g/bhp-hr

* The standard is expressed as 3.0 g/bhp-hr of NMHC+NOx. NOx is estimated to be 95% of the combined standard (3.0*0.95 = 2.85 g/bhp-hr)

Therefore, S-73 complies with the BACT requirements under Regulation 2-2-301 for all applicable pollutants.

Prevention of Significant Deterioration (PSD) (Sections 2-2-304 through 307)

These sections establish standards for PSD BACT requirements, PSD source impact analysis requirements, and PSD additional impacts analysis requirements.

This facility will not emit 100 tons or more per year of any PSD pollutant and, therefore, is not a major PSD facility and is not subject to any of the PSD requirements in Regulations 2-2-304 through 2-2-307 per Regulation 2-2-224.

NAAQS Protection Requirement (Section 2-2-308)

Per Regulation 2-2-308, if a project will result in a significant net increase in emissions of CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, or lead, the applicant must demonstrate that the emissions will not cause or contribute to any exceedance of the National Ambient Air Quality Standards for these pollutants.

This project will not involve any significant net emissions increases, as defined in Regulation 2-2-227.2.

Publication of Notice and Opportunity for Public Comment (Section 2-2-404)

If an application involves a major facility, a PSD project, or an increase in CO, NOx, SO_2, PM_{10}, $PM_{2.5}$, VOC, or lead in an amount that is significant as defined in Regulation 2-2-227.2, the BAAQMD must prepare and distribute a public notice and provide an opportunity for public comment in accordance with Regulation 2-2-404 (Publication of Notice and Opportunity for Public Comment).

This application does not involve a major facility or PSD project, and it will not increase emissions above any of the significance levels defined in Regulation 2-2-227.2.

Regulation 2- Permits, Rule 5 New Source Review of Toxic Air Contaminants

This rule requires that any new or modified source of toxic air contaminant (TAC) emissions subject to Authority to Construct or Permit to Operate requirements shall be evaluated for potential public exposure and health risk and meet the applicable standards and administrative requirements, as specified in Sections 300 and 400, respectively. Section 2-5-216 states that any new or modified source of TACs permitted within a 5-year lookback period from the date that an application is deemed complete shall be included as part of the "project" for purposes of determining compliance with Regulation 2, Rule 5. This project has one related application (Application # 30793) within a five-year period. The TAC emissions from the new or modified sources of the related application (Application # 30793) will therefore be included in the overall project TAC emissions.

The proposed new engines (S-35 through S-73) will emit diesel exhaust particulate matter (Diesel PM) from the combustion of diesel fuel, and Ammonia (NH_3) as secondary emissions from the operation of the SCRs. Both Diesel PM and Ammonia are listed as TACs in Table 2-5-1 of Regulation 2, Rule 5. Footnote 6 to Table 2-5-1 specifies that diesel exhaust particulate matter will be used as a surrogate for all TAC emissions from diesel-fueled compression-ignition internal combustion engines, as this is the principal driver of the health risk associated with this type of equipment. The 20 related sources (S-15 through S-34) are also emergency standby diesel engines that emit Diesel PM. The Diesel PM and ammonia emissions from the individual sources and the project totals are summarized in Tables 13 and 14 below.

Diesel PM emissions for S-35 through S-73 were calculated using the engines' PM emission factor and the same methodology shown earlier in Tables 4a, 4b, and 4c. The Diesel PM emissions for the related sources (S-15 through S-35) were taken from the engineering evaluations for their respective applications.

Table 13. Project Diesel Particulate Matter (Diesel PM) Emissions

Project Diesel PM Emissions							
App Number	**Source IDs & Count of Engine Type**	**Rated Output [bhp/engine]**	**Annual Operating Time [hrs/yr/engine]**	**Unabated Emission Factors [g/bhp-hr]**	**Abatement Efficiency [%]**	**Abated Emission Factors [g/bhp-hr]**	**PM Emissions [lb/yr/engine]**
New: 696975	S35 – S55; S57 - S71 (36x)	4,423	24	0.082	75.6%	0.020	4.68
New: 696975	S56 & S72 (2x)	1,474	24	0.0447	0.0%	0.0447	3.49
New: 696975	S73 (1x)	315	24	0.0746	85.0%	0.0112	0.19
Related: 30793	S15 - S-34 (20x)	4,423	24	0.082	85.0%	0.012	2.88
						Total Project:	**233.2**
						HRA Trigger Level:	**0.26**

For ammonia, the emission calculation methods and hourly/annual emission rates for the new sources (S-35 through S-72) are summarized in Tables 8a and 8b. S-73 is not abated by SCR and therefore not expected to emit any ammonia emissions. Ammonia emissions from related sources, S-15 through S-34, are from the engineering evaluation for AN 30793. The aggregated project ammonia emissions are shown below.

Table 14. Project Ammonia Emissions

Project Ammonia Emissions			
Application Number	**Source Number**	**Hourly Emissions (lb/hr/engine)**	**Annual Emissions (lb/yr/engine)**
New: 696975	S-35 thru 55, S-57 thru 71	0.472	11.3
New: 696975	S-56, S-72	0.142	3.41
Related: 30793	S-15 thru 34	0.46	11.0
Total Project		**26.5**	**634**
HRA Trigger Level		**1.4**	**7,700**

Regulation 2-5-402 requires a Health Risk Assessment (HRA) if TAC emissions exceed the screening thresholds set forth in Table 2-5-1 in Regulation 2, Rule 5. As shown above, the project emissions of Diesel PM and ammonia exceed the Table 2-5-1 chronic and acute trigger levels, respectively.

This application does not qualify for HRA streamlining due to the project TAC emission rates and proximity to nearby sensitive receptors. Therefore, a refined HRA was performed to evaluate the potential chronic carcinogenic and non-carcinogenic health risks from Diesel PM and Ammonia emissions from this project. The HRA evaluated risks to workers and to residents in the vicinity of the project as well as the point of maximum impact (PMI). The HRA assumes that each of the applicable engines will operate up to the maximum allowable hours/year of non-emergency operation. Emissions from emergency operation are not included pursuant to the exemption set forth in Regulation 2-5-111. The results of the HRA are summarized in Tables 15 below.

Table 15. Project HRA Results

Receptor	Cancer Risk	Chronic Hazard Index [(1)]	Acute Hazard Index [(1)]
Resident	1.8 in a million	0.00051	N/A
Worker	5.2 in a million	0.0043	N/A
Student (Mabel Mattos Elementary School)	0.55 in a million	0.00032	N/A
PMI (1-hour)	N/A	N/A	0.052

For the project, the HRA analysis estimated the health risk resulting from TAC emissions from the non-emergency operation of the standby emergency diesel generator engines at this facility. Results from the HRA indicate that the maximum project cancer risk (worker) is **5.2 in a million**, the project maximum chronic hazard index (worker) is **0.00051**, and the project maximum acute hazard index (Point of Maximum Impact) is **0.052**.

In accordance with the District's Regulation 2-5-301, the proposed sources do not require Best Available Control Technology for Toxics (TBACT) because each estimated source cancer risk and hazard indices is less than 1.0 in a million and 0.20, respectively.

The estimated project cancer risk does not exceed 10 in a million and the project chronic/acute hazard indices do not exceed 1.0. Therefore, the project complies with Section 2-5-302 project risk requirements. To ensure compliance with the project risk requirements, the facility has accepted an enforceable permit condition limiting the 39 new engines (S-35 through S-73) to 24 hours per year for testing and maintenance operation.

Compliance with Regulation 2-5 is satisfied for this project.

Regulation 2- Permits, Rule 6 Major Facility Review

Regulation 2 Rule 6 implements the operating permit requirements of Title V of the federal Clean Air Act as amended in 1990. The rule applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities and any facility in a source category designated by the Administrator of the EPA in a rulemaking as requiring a Title V permit. The rule also provides a means by which facilities can avoid Title V or other requirements by limiting their potential to emit. A major facility is defined in Section 2-6- 212 as one that has the potential to emit 100 tons per year of any regulation air pollutant as defined in Section 2-6-222, or that has the potential to emit 10 tons per year of a single hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. The facility is not subject to Title V permitting requirements because the facility potential to emit does not exceed any of the major source thresholds for criteria pollutants or hazardous air pollutants.

The facility is not a Phase II Acid Rain Facility (Section 2-6-217) or a subject solid waste incinerator facility (Section 2-6-229), or a facility defined in a source category defined by EPA requiring a Title V permit.

Regulation 6 - Particulate Matter, Rule 1 - General Requirements

Ringelmann No. 1 Limitation (Section 6-1-301)

Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

Since the engines are expected to emit low amounts of PM_{10}, they are expected to comply with *Regulation 6-1-301* pending a regular inspection.

Opacity Limitation (Section 6-1-302)

Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour an emission equal to or greater than 20% opacity as perceived by an opacity-sensing device, where such device is required by BAAQMD regulations.

Since the engines are expected to emit low amounts of PM_{10}, they are expected to comply with *Regulation 6-1-302* pending a regular inspection.

Visible Particles (Section 6-1-305)

A person shall not emit particles which are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles.

Since the engines are expected to emit low amounts of PM_{10}, they are not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to comply with *Regulation 6-1-305* pending a regular inspection.

Particulate Weight Limitation (Section 6-1-310)

A person shall not emit from any source particulate matter in excess of 0.15 grains/dscf of exhaust gas volume. The particulate matter emission rate in grains/dscf was calculated using the engines' PM emission factor and the manufacturer's specified rated power output, exhaust flow rate, and exhaust temperature. The particulate matter emission rates for the new engines are summarized in Table 16 below.

Table 16. Engine Data & Particulate Matter Emission Rates per Engine

Source ID	PM Emission Factor (g/bhp-hr)	Rated Power Output (bhp)	Exhaust Flow Rate (acfm)	Exhaust Temperature (°F)	Particulate Emission Rate (grains/dscf)
S-35 through S-55 and S-57 through S-72	0.02	4,423	25,620	891.9	0.002
S-56 and S-72	0.045	1,474	8,115.3	892.5	0.005
S-73	0.011	315	1,510	980	0.002

As shown above, the PM emission rates from each proposed engine are much less than the 0.15 grains/dscf limit and therefore comply with *Regulation 6-1-310.1*. Note that the TSP concentration limits set forth in Regulation 6-1-301.2 do not apply because the PTE for PM per source is below the 1000 kg per year applicability threshold.

Regulation 9 – Inorganic Gaseous Pollutants, Rule 1 Sulfur Dioxide

The proposed engines are subject to the following sections of Regulation 9, Rule 1 and will comply with all sections by burning either R100 Renewable Diesel or ULSD. Both fuels have a maximum sulfur content of 15 ppm, which results in less than 1 ppmv of SO_2 in the exhaust gas.

Limitations on Ground Level Concentrations (Section 9-1-301)

Sulfur Dioxide emissions shall not result in ground level concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes or 0.05 ppm averaged over 24 hours.

General Emission Limitation (Section 9-1-302)

A gas stream containing Sulfur Dioxide shall not contain sulfur dioxide in excess of 300 ppm (dry).

Fuel Burning (Liquid and Solid Fuels) (Section 9-1-304)

The sulfur content of liquid fuel burned shall not exceed 0.5% by weight.

Regulation 9 – Inorganic Gaseous Pollutants, Rule 8 NO_x and CO from Stationary Internal Combustion Engines

Exemptions (Section 9-8-110)

Section 110.5 exempts emergency standby engines from the requirements of Sections 9-8-301 through 305, 501 and 503.

Emergency Standby Engines, Hours of Operation (Section 9-8-330)

The engines are subject to the requirements of *Regulation 9-8-330*, which limits reliability-related operation of the engines to 50 hours per year per engine.

Permit Conditions for S-35 through S-73 will include an annual reliability-related operating limit of 24 hours/year, which complies with this requirement.

Monitoring and Records (Section 9-8-500)

The engines are subject to the reporting requirements of Sections 502 and 530.

Permit Conditions for S-35 through S-73 will include reporting requirements that meet this requirement.

Standards of Performance for New Stationary Sources (NSPS)

BAAQMD Regulation 10, and 40 CFR 60, Subpart IIII

Any new or modified source is required to comply with *Regulation 10, Standard of Performance for New Stationary Sources* – which is Title 40, Part 60 of the Code of Federal Regulation incorporated by reference. According to §60.4200(a)(1), the provisions of 40 CFR Part 60 Subpart IIII *Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)* are applicable to (1) manufacturers of stationary CI ICEs with a displacement of less than 30 L/cylinder where the model year is 2007 or later for non-fire pump engines, and (2) owners and operators of stationary CI ICE that commence construction after July 11, 2005 and are manufactured after April 1, 2006 (and are not fire pump engines).

§60.4205 specifies the emission standards that must be met by owners/operators of stationary CI ICE emergency engines. Per §60.4205(b), owners/operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 L/cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202 for all pollutants (for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE).

§60.4202 specifies emergency engine emissions standards for manufacturers of stationary CI ICEs. Per §60.4202(b)(2), manufacturers must certify their 2011 model year and later CI ICEs with a maximum engine power greater than 3000 HP and displacement of less than 10 liters per cylinder that are not fire pump engines to the Tier 2 emission standards as described in in 40 CFR Part 1039, Appendix I for all pollutants.

The proposed engines satisfy the Tier 2 emission standards contained in 40 CFR Part 1039, Appendix I, Table 2 for engines rated higher than 560 kW for model years effective in 2006, as summarized in Table 17 below. Note that for S-73 which is an engine with a rated power between 225<kW<450 that the emission rate limits are the same.

Table 17. Engine Emission Rates vs. 40 CFR 1039, Appendix I, Table 2 Standards

Pollutant	40 CFR 1039, Appendix I, Table 2 Emission Standard (g/kW-hr)	S-35 through S-55 and S-57 through S-71 EPA Certified Unabated Emission Rates (g/kW-hr)	S-56 and S-72 EPA Certified Unabated Emission Rates (g/kW-hr)	S-73 EPA Certified Unabated Emission Rates (g/kW-hr)
NMHC + NO_X	6.4	5.8	5.1	3.4
CO [(1)]	3.5	1.5	0.7	0.6
PM	0.20	0.11	0.06	0.1

Notes:

(1) *Although the engines' EPA certified unabated emission factors for CO are 1.5 and 0.7 g/kW-hr, their permitted CO limit is based on 3.5 g/kW-hr. Please refer to the BACT analysis in the Statement of Compliance Section of this evaluation for more details.*

By using engines in compliance with the above emissions standards, the owner/operator of the proposed emergency stationary CI ICEs therefore complies with the applicable emissions standards specified in §60.4205. Per §60.4206, the owner/operator is expected to operate and maintain the engines in a manner such that they continue to achieve the applicable emissions standards for the entire life of the equipment.

§60.4207 specifies fuel requirements that must be met for owners/operators of a stationary CI ICE engine subject to Subpart IIII. Effective October 1, 2010, diesel-fired stationary CI ICEs with a displacement less than 30 L/cylinder must use diesel fuel that meets the requirements of 40 CFR 1090.305, which specifies the following requirements:

- A maximum sulfur content of 15 ppm; and
- Either (1) a minimum cetane index of 40, or (2) a maximum aromatic content of 35% by volume.

The owner/operator is expected to comply with this requirement because CARB only allows the use of ULSD as fuel for stationary engines in California.

§60.4209 specifies the monitoring requirements for owner/operators of stationary CI ICEs: emergency engines not meeting emission standards must be equipped with a non-resettable hour meter prior to startup, and DPFs (if equipped) must be installed with a backpressure monitor that notifies the owner/operator when high backpressure limit is approached. In addition, monitoring requirements of §60.4211 must be met (see next subsection, below).

S-35 through S-73 meet the standards applicable to emergency engines and will be equipped with a non-resettable hour meter prior to startup of the engines (even though they are not specifically required to do so per this section). The DPF will be equipped with a backpressure monitor to comply with this requirement. Standard permit conditions will be imposed to ensure compliance with these requirements.

§60.4211 requires (a) owners/operators operate and maintain the engine and control device according to manufacturer's emission-related written instructions, change only those emission-related settings that are permitted by the manufacturer, and meet any applicable requirements of 40 CFR 1068. In addition, §60.4211(c) requires owner/operators of 2007 model year and later CI ICEs complying with §60.4205(b) standards to purchase a certified engine, installed and configured according to the manufacturer's emission-related specifications. Lastly, §60.4211(f) specifies emergency engine operation for non-emergency purposes are limited to 50 hours per year (up to 100 hours per year for certain situations) and emergency use is unlimited.

The owner/operator is expected to comply with the compliance requirements outlined in §60.4211. All of the proposed new engines (S-35 through S-73) are part of certified EPA Engine Family PCPXL106.NZS (S-35 through S-55 and S-57 through S-71), PCPXL32.0NZS (S-56 and S-72), or PJDXL13.5103 (S-73). Furthermore, the applicant has accepted an annual non-emergency operation limit of 24 hours per year for each proposed engine.

§60.4214 specifies notification, reporting and recordkeeping requirements for owners/operators of CI ICEs.

The proposed engines (S-35 through S-73) are not subject to initial notification requirements of §60.4214(b) because they are emergency engines and meet the standards applicable to non-emergency engines in the applicable model year.

§60.4218 specifies that the owner/operator must comply with the applicable general provisions set forth in 40 CFR, Parts 60.1 through 60.19.

The owner/operator is expected to comply with these provisions.

National Emission Standards for Hazardous Air Pollutants (NESHAP)
40 CFR 61, and 40 CFR 63, Subpart ZZZZ

There are no subparts under 40 CFR Part 61 that apply to ICEs. Therefore, this regulation does not apply to any of the proposed sources in this application.

40 CFR Part 63 Subpart ZZZZ establishes NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICEs). Both area sources and major sources of RICEs are subject to Subpart ZZZZ.

The facility constitutes an area source of HAPs because the PTE of any single or combined HAP are below the respective 10 or 25 TPY threshold for major sources. The proposed engines S-35 through S-73 are new stationary RICE CIs at an area source subject to (and compliant with) regulations under 40 CFR Part 60 Subpart IIII. Therefore, per 40 CFR 63.6590(c)(1), no further requirements apply for the proposed engines under Subpart ZZZZ.

California State Regulations

The BAAQMD is charged with enforcing the requirements of California's Air Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines *Title 17, California Code of Regulations, Section 93115* for the purpose of reducing diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines.

ATCM for Emergency Standby Diesel-Fueled CI Engines (>50 bhp)

Subsection 93115.5(a) specifies fuel requirements for new stationary CI engines with a maximum engine power greater than 50 HP. An owner/operator of a new stationary CI engine shall fuel the engine only with fuel that meets one of the criteria set forth in Subsections 93115.5(a)(1) through 93115.5(a)(6).

The owner/operator is expected to comply with this requirement because CARB only allows the use of ULSD as fuel for stationary engines in California.

Subsection 93115.6(a)(3)(A)(1)(a) sets forth Emission Standards for new stationary emergency standby diesel fueled compression ignition engines with maximum engine power greater than 50 HP.

The owner/operator has accepted an annual non-emergency operation limit of 24 hours per year for each proposed engine.

S-35 through S-73 are subject to and meet the requirement of this section of the ATCM as shown in the table below:

Table 18a. Engine Emission Rates vs. ATCM Emission Standards for S-35 through S-72

Pollutant	ATCM Emission Standard Model Year: 2008+ HP > 750 (g/bhp-hr)	S-35 through S-55 and S-57 through S-71 Unabated Emission Rate (g/bhp-hr)	S-56 and S-72 Unabated Emission Rate (g/bhp-hr)
NMHC + NO_X	4.8	4.325	3.80
CO (1)	2.6	1.12	0.52
PM	0.15	0.082	0.044

Notes:

(1) *Although the engines' EPA certified unabated emission factor for CO is 1.12 and 0.52 g/bhp-hr, their permitted CO limit is based on 2.6 g/bhp-hr. Please refer to the BACT analysis in the Statement of Compliance Section of this evaluation for more details.*

Table 18b. Engine Emission Rates vs. ATCM Emission Standards for S-73

Pollutant	ATCM Emission Standard Model Year: 2008+ 300 <HP< 750 (g/bhp-hr)	S-73 Unabated Emission Rate (g/bhp-hr)
NMHC + NO_X	3.0	2.5
CO [(1)]	2.6	0.5
PM	0.15	0.075

Subsection 93115.6(a)(3)(A)(1)(b) requires that new stationary emergency standby diesel-fueled engines (>50 bhp) be certified to the emission standards as specified in *40 CFR, Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

As discussed in the NSPS section of this evaluation, the proposed engines (S-35 through S-73) are certified to meet EPA Tier 2 standards and they comply with 40 CFR Part 60 Subpart IIII. Therefore, all new proposed engines comply with this section of the ATCM.

Subsection 93115.6(a)(3)(A)(1)(c) limits the non-emergency operation of 50 hours/year for maintenance and testing.

Permit Conditions for S-35 through S-73 will limit non-emergency operation to 24 hours/year, per engine and as such, will comply with this section of the ATCM.

PUBLIC PARTICIPATION PERIOD

Standard BAAQMD permitting procedures stipulate that all complete applications undergo a 10-Day Public Participation Period (PPP). During this time, members of the public may submit comments on application materials. During the 10-day PPP for this application, no comments were received on the application materials.

PERMIT CONDITIONS

Permit Condition #100072 – Applies to S-35 through S-73

1. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

2. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

3. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
    a. Hours of operation for reliability-related activities (maintenance and testing).
    b. Hours of operation for emission testing to show compliance with emission limits.
    c. Hours of operation (emergency).
    d. For each emergency, the nature of the emergency condition.
    e. Fuel usage for each engine(s).
    [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

4. At School and Near-School Operation: If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply: The owner or operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:
    a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
    b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

    "School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.
    [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

Permit Condition #100073 – Applies to S-35 through S-73

The owner/operator shall not exceed the following limits per year per engine for reliability-related activities:

24 Hours of Diesel fuel (Diesel fuel)
[Basis: Cumulative Increase; Regulation 2-5; Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

Permit Condition #TBD – Applies to S-35 through S-73

1. The owner/operator shall operate no more than one engine at a time for reliability-related activities. [Basis: CEQA]

2. The owner/operator shall operate no more than 8 engines for reliability-related activities on any calendar day. [Basis: CEQA]

3. The owner/operator shall only operate the engines for reliability-related activities between 7:00 a.m. and 7:00 p.m. on any calendar day. [Basis: CEQA]

4. Records: The owner/operator shall record the start time, end time, and date of any reliability-related activities at each engine and maintain the records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request. [Basis: CEQA; Recordkeeping]

Permit Condition #TBD – Applies to S-35 through S-55 and S-57 through S-71

Tier 2 Engines from Application 696975 (S-35 through S-55, and S-57 through S-71). Each is equipped with add-on SCR and DPF/DOC to meet Tier 4 emission standards.

1. The owner/operator shall ensure each engine is abated at all times of operation by an approved Selective Catalytic Reduction (SCR) System and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, SCR System, and DPF with backpressure monitor, or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices.
   [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, and Regulation 2, Rule 5]

2. The owner/operator shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications.
   [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT]

3. The owner/operator shall ensure urea injection commences as soon as the SCR catalyst bed reaches the minimum operating temperature as specified by the manufacturer.
   [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT]

4. The owner/operator shall ensure engine emissions do not exceed an ammonia (NH_3) slip of 10 ppmv, dry @ 15% O_2 from the SCR system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require a source test to determine compliance with this emission limit.
   [Basis: Regulation 2, Rule 5]

5. The owner/operator shall ensure engine emissions do not exceed the following limits:

   NOx: 0.50 g/bhp-hour
   CO: 2.60 g/bhp-hour
   POC: 0.14 g/bhp-hour
   PM: 0.02 g/bhp-hour

   [Basis: BACT, Cumulative Increase, and Regulation 2, Rule 5]

6. To demonstrate compliance with Part 5, the owner/operator shall conduct an initial Air District-approved source test within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The initial source testing shall be conducted on a minimum of one third of the identical engines installed within a calendar year. The subsequent periodic source testing shall be conducted on a minimum of one third of the identical engines once every three years. The owner/operator shall document urea usage (gallons per minute) and average kW during all tests, preferably as digital records. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after source test completion.

During each subsequent triennial source test, the owner/operator shall test a different one third of the identical engine group installed in a given calendar year. After every engine in an identical group has been tested, the next triennial test shall be performed on the first one third set of engines tested in the identical group. Identical engines must be of the same make, model, model year, engine family, and must be abated by a DPF, DOC, and SCR.

[Basis: BACT and Cumulative Increase]

7. The owner/operator shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:

NOx:	EPA Method 7E or Air District-approved equivalent
CO:	EPA Method 10 or Air District-approved equivalent
POC:	EPA Method 25A and EPA Method 18 or Air District-approved equivalent
PM (filterable):	EPA Method 5 or Air District-approved equivalent

[Basis: Regulation 2-1-403]

8. To determine compliance with the above parts, the owner/operator shall maintain the following records in an Air District-approved log and shall make these records available to Air District staff upon request. All records shall be retained for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or Synthetic Minor Operating Permit). These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District or state regulations.

a. Source Test Notifications.
b. All source test reports.
c. Engine serial number and source number for each source test.
d. Engine load percentage.
e. Engine, SCR, and DPF maintenance records.
f. SCR system owner's manual or manufacturer's specifications.
g. DPF owner's manual or manufacturer's specifications.
h. All backpressure monitor notifications and corrective actions.
i. SCR urea injection rate (gpm).

[Basis: BACT, Cumulative Increase, Recordkeeping]

Permit Condition #TBD – Applies to S-56 and S-72

Tier 2 Engines from Application 696975 (S-56 and S-72). Each is equipped with add-on SCR and DPF/DOC to meet Tier 4 emission standards.

1. The owner/operator shall ensure the engines are abated at all times of operation by an approved Selective Catalytic Reduction (SCR) System and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, SCR System, and DPF with backpressure monitor, or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices.
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, and Regulation 2, Rule 5]

2. The owner/operator shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications.
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT]

3. The owner/operator shall ensure urea injection commences as soon as the SCR catalyst bed reaches the minimum operating temperature as specified by the manufacturer.
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT]

4. The owner/operator shall ensure engine emissions do not exceed an ammonia (NH_3) slip of 10 ppmv, dry @ 15% O_2 from the SCR system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require a source test to determine compliance with this emission limit.
[Basis: Regulation 2, Rule 5]

5. The owner/operator shall ensure engine emissions do not exceed the following limits:

NOx: 0.50 g/bhp-hour
CO: 2.60 g/bhp-hour

[Basis: BACT, Cumulative Increase, and Regulation 2, Rule 5]

6. To demonstrate compliance with Part 5, the owner/operator shall conduct an initial Air District-approved source test within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The initial source testing shall be conducted on at least one of the two identical engines. The subsequent periodic source testing shall be conducted on the other identical engine once every three years. The owner/operator shall document urea usage (gallons per minute) and average kW during all tests, preferably as digital records. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after source test completion.

After every engine in an identical group has been tested, the next triennial test shall be performed on the first engine tested in the identical group. Identical engines must be of the same make, model, model year, engine family, and must be abated by a DPF, DOC, and SCR.

[Basis: BACT and Cumulative Increase]

7. The owner/operator shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:

NOx:	EPA Method 7E or Air District-approved equivalent
CO:	EPA Method 10 or Air District-approved equivalent

[Basis: Regulation 2-1-403]

8. To determine compliance with the above parts, the owner/operator shall maintain the following records in an Air District-approved log and shall make these records available to Air District staff upon request. All records shall be retained for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or Synthetic Minor Operating Permit). These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District or state regulations.

a. Source Test Notifications.
b. All source test reports.
c. Engine serial number and source number for each source test.
d. Engine load percentage.
e. Engine, SCR, and DPF maintenance records.
f. SCR system owner's manual or manufacturer's specifications.
g. DPF owner's manual or manufacturer's specifications.
h. All backpressure monitor notifications and corrective actions.
j. SCR urea injection rate (gpm).

[Basis: BACT, Cumulative Increase, Recordkeeping]

End of Conditions

RECOMMENDATION

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue Authorities to Construct for the equipment listed below. However, the proposed source will be located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

S-35 → S-55; *and*	**Emergency Standby Diesel Engine-Genset (SVY01C)**
S-57 → S-71:	**Emergency Standby Diesel Engine-Genset (SVY01D)**
(36 identical)	**Make: Caterpillar; Model: C175-16, Model Year: 2023**
	EPA Engine Family: PCPXL106.NZS
	4,423 bhp, 28.962 MMBTU/hr
	Abated by

A-135 → A-155; and **A-157 → A-171:** **(36 identical)**	**Diesel Particulate Filter/Diesel Oxidation Catalyst (DPF/DOC)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
	And
A-235 → A-255: **A-257 → A-271:** **(36 identical)**	**Selective Catalytic Reduction (SCR)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
S-56; *and* **S-72:** **(2 identical)**	**Emergency Standby Diesel Engine-Genset (SVY01C)** **Emergency Standby Diesel Engine-Genset (SVY01D)** **Make: Caterpillar; Model: C32, Model Year: 2023** **EPA Engine Family: PCPXL32.0NZS** **1,474 bhp, 9.796 MMBTU/hr**
	Abated by
A-156 & A-172: **(2 identical)**	**Diesel Particulate Filter/Diesel Oxidation Catalyst (DPF/DOC)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
	And
A-256 → A-272: **(2 identical)**	**Selective Catalytic Reduction (SCR)** **Make: Safety Power, Inc., Model: ecoCUBE Series 5**
S-73:	**Emergency Standby Diesel Engine-Genset (SVY01F)** **Make: John Deere; Model: 6068HFG85A, Model Year: 2023** **EPA Engine Family: PJDXL13.5103** **315 bhp, 2.096 MMBTU/hr**
	Abated by
A-73	**Diesel Particulate Filter (DPF)** **Make: Johnson Matthey Model: JM-CRT(+)-2-N-CS-BITO-8/8** **CARB Executive Order: DE-08-009-12**

By:__________________ Date: ______________________________________

Cameron Fee
Air Quality Engineer