SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *ENGINEERING DIVISION* APPLICATION PROCESSING AND CALCULATIONS	PAGES 16	PAGE 1
	APPL. NO. 545901	DATE 6/6/2013
	PROCESSED BY KEN COATS	CHECKED BY

PERMIT TO OPERATE

COMPANY NAME AND ADDRESS

University of Southern California, University Park
3434 South Grand Avenue, CDF
Los Angeles, CA 90089-3161
FACILITY ID # 800265

CONTACT: Mr. Angel Burgos, (626) 318-7475

EQUIPMENT LOCATION

McClintock W 34th Childs Street
Los Angeles, CA 90089

EQUIPMENT DESCRIPTION:

A/N 545901
BOILER, KEWANEE, FIRE TUBE, MODEL L-35-350-GO2, SERIAL NO. R0292, 14,700,000 BTU/HR, NATURAL GAS FIRED, WITH ONE INDUSTRIAL COMBUSTION LOW NOX BURNER, MODEL NO. PF-NTD-147-GX-9S-6, EQUIPPED WITH A 40 HP COMBUSTION AIR BLOWER AND INDUCED DRAFT FLUE GAS RECIRCULATION SYSTEM.

A/N 545881
INTERNAL COMBUSTION ENGINE, CATERPILLAR, 12 CYLINDER, DIESEL FUELED, TURBOCHARGED, AFTERCOOLED, MODEL C-27, 1,213 BHP, DIESEL FUELED, EQUIPPED WITH A MIRATECH MODEL CBS25V-12 DIESEL PARTICULATE FILTER, DRIVING AN 800 KW EMERGENCY ELECTRICAL GENERATOR.

A/N 545882
INTERNAL COMBUSTION ENGINE, CUMMINS MODEL NO. QSB7-G5 NR3, DIESEL FUELED, 324 BHP, 6 CYLINDER, TURBOCHARGED, AFTERCOOLED, EQUIPPED WITH A JOHNSON-MATTHEY MODEL CRT DIESEL PARTICULATE FILTER, DRIVING A 150 KW EMERGENCY ELECTRICAL GENERATOR.

A/N 548692
INTERNAL COMBUSTION ENGINE, JOHN DEERE MODEL NO. 6090HFG86, 463 BHP, 6 CYLINDER, TURBOCHARGED, AFTERCOOLED, DIESEL FUELED, EQUIPPED WITH A DIESEL PARTICULATE FILTER, RYPOS, MODEL NO. RH-406L, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

BACKGROUND

The University of Southern California – University Park (USC) is the main campus of the USC system of colleges and medical facilities. The facility is in Title V and does not participate in the RECLAIM program. USC operates several boilers, which, based on the maximum rated heat input, are subject to Rules 1146 and 1146.1. USC was required to submit a Rule 1146 Compliance Plan by January 1, 2011 as well as applications for Permits to Construct for each boiler to achieve a compliance with the NOx emission rate of 9 ppmv at 3% O2 for those boilers required to comply with Rule 1146. USC filed A/N 516185 for Rule 1146 Compliance Plan to install a low NOx burners on the existing boilers. The plan was approved on January 14, 2011. A/N 545901 was submitted to retrofit the existing 14,700,000 BTU/hr boiler with a new low-NOx burner to comply with the 9 ppmv NOx limit by January 1, 2015.

USC also submitted three applications for Permit to Construct for three new diesel fueled emergency ic engines. The engine rated at 1,213 bhp will be installed at the Social Sciences Building. The engine rated at 324 bhp will be installed at Gerontology Building. The engine rated at 463 bhp will be installed at the Annenberg Building. USC also submitted an application for a Significant Revision to their Title V Permit. The application details are shown below:

A/N	Equipment	Processing Fee
545901	Boiler, 14.7 MMBTU/hr	$3,440.06
545882	Emergency IC Engine, 1,213 bhp	$2,174.89
545881	Emergency IC Engine, 324 bhp	$2,174.89
548692	Emergency IC Engine, 463 bhp	$2,174.89
545900	Title V Significant Revision	$894.55
	Total Permit Processing Fee	$10,859.28

COMPLIANCE REVIEW

A review of the District compliance database indicates that there were two Notices to Comply (NC) issued to USC between July 2011 and July 2013. The first NC (NC E14420) was issued on 4/25/2012 for a violation which occurred on 4/4/2012 for failure to perform timing certifications for all required ic engines. The second NC (NC E17977) was issued on 9/25/2012 for a violation which occurred on 9/25/2012 for failure to submit Form 500-RO to match the responsible official with the Title V Permit. The status of both NCs is closed and PAATS database indicates that the facility is in compliance as of the date of this evaluation. There are no additional compliance activity for this facility.

EMISSIONS

Emissions Prior to Modification

Emissions prior to modifications for the boiler are taken from the previous evaluation (A/N 405131) and are based on natural gas usage and the permitted NOx and CO concentration limits emission limits from the old permit. The emissions from the remaining pollutants were based on emission factors from the previous evaluation. The tables below shows the details:

Equipment	A/N	Previous A/N	Permitted Emission Limit, ppmv	Heat Input MMBTU/hr
Boiler	545901	405131	NOx: 20 CO: 50	14.7

Boiler Prev A/N: 405131	NOx (20 ppmv)	CO (50 ppmv)	VOC	PM10	SOx
EF (lb/MMSCF)			7	7.5	0.83
Hourly (lb/hr)	0.356	0.541	0.098	0.105	0.012
Monthly (lb/month)	264.86	402.50	72.91	78.12	8.93
Yearly (lb/yr)	2,390.57	3,638.21	658.56	705.60	78.09
Yearly (ton/yr)	1.20	1.82	0.329	0.353	0.039
30DA (lb/day)	**9**	**13**	**2**	**3**	**0**

Emissions After Boiler Modification

The applicant has submitted a performance warranty which indicates that the new low NOx burner will comply with the emission limits of 9 ppmv for NOx and 50 ppmv for CO both measured at 3% oxygen. There will be a reduction in NOx emissions due to the installation of the low NOx burner. There will be no changes to the remaining pollutants.

Equipment	A/N	Emission Limit, ppmv	Heat Input MMBTU/hr	NG HHV BTU/scf	Max Flow Rate scf/hr
Boiler	545901	NOx: 9 CO: 50	14.7	1,020	14,411.76

NOx EF = 1.28*9 = 11.52 lb/mmscf
CO EF = 1.28*(28/46)*50 = 38.96 lb/mmscf

Boiler No. 1 A/N 545901	NOx (9 ppmv)	CO (50 ppmv)	VOC	PM10	SOx
EF (lb/mmscf)	11.52	38.96	7	7.5	0.83
Hourly (lb/hr)	0.166	0.541	0.098	0.105	0.012
Monthly (lb/month)	123.50	402.50	72.91	78.12	8.93
Yearly (lb/yr)	1,454.16	3,638.21	658.56	705.60	105.12
Yearly (ton/yr)	0.727	1.82	0.329	0.353	0.053
30DA (lb/day)	**4.11**	**13.41**	**2.43**	**2.60**	**0.298**

USC will also install two new emergency electrical generators. The emissions from these units are shown in the tables below:

A/N 545881
Emergency IC Engine Mass Emission Rates

Pollutant	EF Value	EF Unit	BHP	lb/hr	lb/year	lb/month	30DA
NOx	4.0	gm/bhp-hr	1,213	10.68	534.36	44.53	**1.48**
CO	0.98	gm/bhp-hr	1,213	2.62	130.92	10.91	**0.36**
VOC	0.10	gm/bhp-hr	1,213	0.27	13.36	1.11	**0.04**
PM10	0.004	gm/bhp-hr	1,213	0.011	0.55	0.05	**0.002**
SOx[1]	0.0014	gm/bhp-hr	1,213	0.004	0.20	0.02	**0.00067**

[1] AP-42 SOx emissions factor for diesel fueled ic engines = 2.05EE-03*0.0015*454 gm/lb = 0.0014 gm/bhp-hr

A/N 545882
Emergency IC Engine Mass Emission Rates

Pollutant	EF Value	EF Unit	BHP	lb/hr	lb/year	lb/month	30DA
NOx	2.68	gm/bhp-hr	324	1.91	95.50	7.96	0.27
CO	0.70	gm/bhp-hr	324	0.50	25.00	2.08	0.07
VOC	0.02	gm/bhp-hr	324	0.01	0.50	0.04	0.00
PM10	0.008	gm/bhp-hr	324	0.006	0.29	0.02	0.00
SOx[2]	0.0014	gm/bhp-hr	324	0.00	0.05	0.00	0.00

[2] AP-42 SOx emissions factor for diesel fueled ic engines = 2.05EE-03*0.0015*454 gm/lb = 0.0014 gm/bhp-hr

A/N 548692
Emergency IC Engine Mass Emission Rates

Pollutant	EF Value	EF Unit	BHP	lb/hr	lb/year	lb/month	30DA
NOx	2.76	gm/bhp-hr	463	2.81	140.50	11.71	0.39
CO	0.45	gm/bhp-hr	463	0.46	23.00	0.77	0.03
VOC	0.08	gm/bhp-hr	463	0.08	4.00	0.03	0.00
PM10	0.03	gm/bhp-hr	463	0.03	1.5	0.13	0.00
SOx[2]	0.0014	gm/bhp-hr	463	0.00	0.05	0.00	0.00

[2] AP-42 SOx emissions factor for diesel fueled ic engines = 2.05EE-03*0.0015*454 gm/lb = 0.0014 gm/bhp-hr

The following tables show the emission summaries for the boiler modification and the installation of the new emergency electrical generators.

A/N 545901

		NOx	CO	VOC	PM10	SOx
Boiler, 14.7 MMBTU/hr	Pre Modification	9	13	2	3	0
	Post Modification	4.11	13.41	2.43	2.60	0.298
	Increase (Yes/No)	No	No	No	No	No

A/N 545881

IC Engine, 1,213 bhp	NOx	CO	VOC	PM10	SOx
30 DA	1.48	0.36	0.04	0.002	0.00067
Increase (Yes/No)	Yes	Yes	No	No	No

A/N 545882

IC Engine, 324 bhp	NOx	CO	VOC	PM10	SOx
30 DA	0.27	0.07	0.00	0.00	0.00
Increase (Yes/No)	No	No	No	No	No

A/N 548692

IC Engine, 463 bhp	NOx	CO	VOC	PM10	SOx
30 DA	0.39	0.03	0.00	0.00	0.00
Increase (Yes/No)	No	No	No	No	No

GHG Emissions
A/N 545901: 14.7 MMBTU/hr Boiler

GHG Pollutant	Emissions (lb/hr)	Emissions (lb/day)	Emissions (lb/year)
CO2	1,715	41,152	15,020,441
CH4	0.032	0.778	283.80
N2O	0.003	0.078	28.38

A/N 545881: 1,213 BHP Emergency IC Engine

GHG Pollutant	Emissions (lb/hr)	Emissions (lb/day)	Emissions (lb/year)
CO2	1,286	30,873	257,277
CH4	0.052	1.238	10.31
N2O	0.010	0.248	2.06

A/N 545882: 324 BHP Emergency IC Engine

GHG Pollutant	Emissions (lb/hr)	Emissions (lb/day)	Emissions (lb/year)
CO2	629	15,086	125,720
CH4	0.025	0.605	5.04
N2O	0.005	0.121	1.01

A/N 548692: 463 BHP Emergency IC Engine

GHG Pollutant	Emissions (lb/hr)	Emissions (lb/day)	Emissions (lb/year)
CO2	1,423	34,160	284,666
CH4	0.057	1.369	11.41
N2O	0.011	0.274	2.28

RULE EVALUATION

Rule 212 – Standards for Approving Permits and Issuing Public Notice
The facility is located within 1,000 feet of the boundary of a school, however, there are no emission increases from the facility due to the modification of the boiler. A/N 545881 (emergency engine, 1,213 bhp) is located at 450 feet from the outer boundary of a school and there is an increase in NOx emissions from this engine. Therefore a Rule 212 Public Notice is required for this engine. However, the MICR from this engine is less than 1-in-a-million for both the commercial and residential receptors. The remaining two engine stack are located greater than 1,000 feet from the outer boundary of the school. Therefore, a Rule 212 Public Notice is not required for these engines.

Rule 401 – Visible Emissions
Compliance with this rule is expected under normal operation.

Rule 402 – Nuisance
Compliance with this rule is expected under normal operation.

Rule 404 – Particulate Matter – Concentration
This rule limits the PM emissions. Compliance is anticipated.

Rule 407 – Liquid and Gaseous Air Contaminants
This rule limits CO to 2,000 ppmv. Compliance is expected.

Rule 409 – Combustion Contaminants
This rule specifies that PM emissions from combustion shall be less than 0.1 g/scf, corrected to 12% CO_2 concentration. Compliance is anticipated.

Rule 431.1 – Sulfur Content of Gaseous Fuels
The boiler will be fired exclusively with PUC grade pipeline quality natural gas. The sulfur content of the natural gas meets the criteria specified in this rule. Compliance is anticipated.

Rule 431.2 – Sulfur Content of Liquid Fuels
Each of the emergency ic engines will use low-sulfur diesel fuel that will comply with the requirements of this rule. Compliance is expected.

Rule 1146 – NOx Emissions from Boilers, Steam Generators, and Process Heaters
This rule applies to boilers and heaters whose heat input rates are equal to or greater than 5 MMBTU/hr . The boiler has a heat input of 14.7 MMBTU/hr. Therefore, this boiler is subject to Rule 1146. This is a Group III boiler which is required to meet the 9 ppmv NOx emission limit by 1/1/2015. The installation of the new low NOx burner will ensure compliance with the 9 ppmv limit.

Regulation XIII – New Source Review

A/N 545901 – 14.7 MMBTU/hr Boiler
There is a net emission reduction in NOx and no increases for the remaining pollutants due to the proposed installation of the low NOx burner. Therefore, Reg XIII is not triggered for the boiler.

A/N 545881 – 1,213 bhp Emergency IC Engine
There is an increase in emissions for NOx from the installation of the new emergency ic engine as shown in the table below.

IC Engine, 1,213 bhp	NOx	CO	VOC	PM10	SOx
30 DA	1.48	0.36	0.04	0.002	0.00067
Increase (Yes/No)	Yes	No	No	No	No

Therefore NSR applies to this engine.

BACT

IC Engine, 1,213 bhp	NOx +VOC gm/bhp-hr	CO gm/bhp-hr	PM10 gm/bhp-hr
BACT limit	4.8	2.6	0.15
Emissions	4.1	0.98	0.004
Comply (Y/N)	Yes	Yes	Yes

The engine is exempt from modeling and offsets under Rule 1304(a)(4) – Emergency Equipment operating not more than 200 hours per year.

A/N 545882 – 325 bhp Emergency IC Engine

There is no increase in emissions from the installation of the new emergency ic engine. Therefore, NSR is not triggered for this engine

A/N 5486922 – 463 bhp Emergency IC Engine

There is no increase in emissions from the installation of the new emergency ic engine. Therefore, NSR is not triggered for this engine

Rule 1401 – New Source Review of Toxic Air Contaminants

There is a decrease in NOx emissions due to the installation of the new low NOx burner and no emission increases in the remaining pollutants. It is assumed that there is no increase in toxic air contaminants from the boiler. Therefore, a health risk assessment (HRA) is not required. The emergency ic engines are exempt per Rule 1401(g)(1)(F).

Rule 1470 – Requirements For Stationary Diesel Fueled Internal Combustion and Other Compression Ignition Engines

1470(c)(1(B) – Fuel and Fuel Additive Requirements for New and In-Use Stationary Diesel Engines

The proposed engine will comply with the fuel requirements by using CARB certified diesel fuel. compliance is expected.

1470(C)(iii) – PM Emission Standards for New Stationary Emergency Standby Diesel Fueled Engines

The proposed engines are each expected to comply with the PM emission limit of 0.15 gm/bhp-hr with the installation of the Diesel Particulate Filters (DPFs) on each engine.

1470(c)(viii) – NMHC+NOx and CO Emission Standards for New Stationary Emergency Standby Engines

The rule requires new stationary emergency standby engines to comply with the following emission limits for engines with maximum power > 750 bhp:

Engine No. 1 (A/N 545881)

	Emission Limit (gm/bhp-hr)	Emissions (gm/bhp-hr)	Comply (Y/N)
NMHC+NOx	4.8	4.1	Yes
CO	2.6	0.7	Yes

Engine No. 2 (A/N 545882)

	Emission Limit (gm/bhp-hr)	Emissions (gm/bhp-hr)	Comply (Y/N)
NMHC+NOx	3.0	3.0	Yes
CO	2.6	2.6	Yes

Engine No. 2 (A/N 548692)

	Emission Limit (gm/bhp-hr)	Emissions (gm/bhp-hr)	Comply (Y/N)
NMHC+NOx	3.0	2.84	Yes
CO	2.6	0.45	Yes

Therefore, the proposed engines will comply with the emission limits of 1470(c)(viii)

1470(c)(2)(F) – The applicant will be required to comply with the diesel particulate cleaning options. Compliance is expected.

Compliance with the applicable provisions of Rule 1470 is expected.

NSPS

Title 40 Part 60 Subpart IIII

Emergency compression ignition (CI) engines of model year 2007 or later with a displacement of <30 liters/cylinder must to comply with the emission limits in the table below. The proposed 1,213 bhp engine is a 2009 model which will have a total displacement of 27 liters/cylinder and will comply with the following emissions limits.

A/N 545881– 1,213 bhp Emergency IC Engine

Pollutant	Emission Limit gm/kw-hr	Engine Emissions gm/kw-hr	Comply (Y/N)
NOx+VOC	9.8	5.4	Yes
CO	5.0	1.3	Yes
PM	0.50	0.14	Yes

The proposed 324 bhp engine is a 2011 model which will have a total displacement of 6.7 liters/cylinder and will comply with the following emissions limits.

A/N 545882

Pollutant	Emission Limit gm/kw-hr	Engine Emissions gm/kw-hr	Comply (Y/N)
NOx+VOC	7.8	4.0	Yes
CO	5.0	1.0	Yes
PM	0.27	0.11	Yes

The proposed 463 bhp engine is a 2012 model which will have a total displacement of 9.0 liters/cylinder and will comply with the following emissions limits.

A/N 458692

Pollutant	Emission Limit gm/kw-hr	Engine Emissions gm/kw-hr	Comply (Y/N)
NOx+VOC	7.8	3.81	Yes
CO	5.0	0.60	Yes
PM	0.27	0.11	Yes

NESHAPS

Title 40 Part 63, Subpart ZZZZ

The engine proposed for construction at USC University Park is a new compression ignition (CI) reciprocating internal combustion engines (RICE) located at an area source. Per the requirements of 40 CFR 63 Subpart ZZZZ, the emission standards for new RICE located at area sources must meet the requirements of 40 CFR 60 Subpart IIII. Each of the engines will comply with 40 CFR 60 Subpart IIII. Therefore, the proposed engines will comply with 40 CFR 63 Subpart ZZZZ.

Title 40 Part 63, Subpart JJJJJJ

The boiler is fired exclusively on natural gas located at an area source. Therefore, 40 CFR 63 Subpart JJJJJJ is not applicable to this boiler.

Regulation XXX – Title V

USC University Park is in the Title V program. The modification to the boilers by the addition of the low NOx burners and the installation of the two emergency ic engines constitutes a significant permit revision to the Title V permit and is subject to the Title V requirements. Therefore, this permit revision is subject to a 45-day EPA review and comment period.

RECOMMENDATION

Issue revised Permits to Operate for the boiler and each emergency ic engine with the following conditions.

CONDITIONS

A/N 545901 – Boiler, 14.7 MMBTU/hr

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
   [RULE 204]

2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
   [RULE 204]

3. ON OR AFTER JANUARY 1, 2014, THIS BOILER SHALL NOT EMIT MORE THAN 9 PPM OF OXIDES OF NITROGEN (NOX), CALCULATED AS NO2, AND NOT MORE THAN 50 PPM OF CARBON MONOXIDE (CO), ALL MEASURED BY VOLUME ON A DRY BASIS AT 3% OXYGEN AND AVERAGED OVER A PERIOD OF 15 CONSECUTIVE MINUTES.
   [RULE 1146, RULE 1303(B)(2)-OFFSET]

4. THIS BOILER SHALL BE FIRED ON NATURAL GAS ONLY
   [RULE 1146]

5. THIS BOILER SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULE 1146, INCLUDING THE SOURCE TESTING REQUIREMENTS OF RULE 1146(d)(6) THROUGH (d)(8).
   [RULE 1146]

6. THIS BOILER SHALL NOT BE OPERATED UNLESS THE FLUE GAS RECIRCULATION SYSTEM IS IN FULL OPERATION. THE FLUE GAS RECIRCULATION SYSTEM SHALL BE IN FULL USE WITHIN ONE MINUTE AFTER THE MAIN FLAME IS ESTABLISHED.
   [RULE 1146, RULE 1303(B)(2)-OFFSET]

7. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL CONDUCT SOURCE TESTS UNDER THE FOLLOWING CONDITIONS:

   A. SOURCE TESTING SHALL BE CONDUCTED WITHIN 60 DAYS AFTER INITIAL START-UP UNLESS OTHERWISE APPROVED IN WRITING BY THE EXECUTIVE OFFICER.

   B. THE SOURCE TESTS SHALL BE PERFORMED TO VERIFY COMPLIANCE WITH THE NOX AND CO EMISSION LIMITS SPECIFIED IN CONDITION NO. 3.

C. THE TESTS SHALL BE CONDUCTED WHILE THE BOILER IS FIRING AT MAXIMUM, AVERAGE, AND MINIMUM FIRING RATES.

D. WRITTEN NOTICE OF THE SOURCE TESTS SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, P.O. BOX 4941, DIAMOND BAR, CA 91765) AT LEAST 10 DAYS PRIOR TO TESTING SO THAT AN OBSERVER MAY BE PRESENT.

E. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT WITHIN 30 DAYS AFTER THE TEST. THE REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO EMISSIONS RATES IN POUNDS PER HOUR AND CONCENTRATIONS IN PPMV AT THE OUTLET OF THE HEATER, MEASURED ON A DRY BASIS AT 3% OXYGEN. THE FOLLOWING OPERATING DATA SHALL ALSO BE INCLUDED FOR EACH FIRING RATE:

I. THE EXHAUST FLOW RATES, IN ACTUAL CUBIC FEET PER MINUTE (ACFM).
II. THE FIRING RATES, IN BTU PER HOUR.
III. THE EXHAUST TEMPERATURE, IN DEGREES FAHRENHEIT.
IV. THE OXYGEN CONTENT OF THE EXHAUST GASES, IN PERCENT.
V. THE FUEL FLOW RATE.

F. A TESTING LABORATORY CERTIFIED BY THE CALIFORNIA AIR RESOURCES BOARD IN THE REQUIRED TEST METHODS FOR CRITERIA POLLUTANT TO BE MEASURED, AND IN COMPLIANCE WITH DISTRICT RULE 304 (NO CONFLICT OF INTEREST) SHALL CONDUCT THE TEST.

G. SAMPLING FACILITIES SHALL COMPLY WITH THE DISTRICT GUIDELINES FOR CONSTRUCTION OF SAMPLING AND TESTING FACILITIES PURSUANT TO RULE 217.
[RULE 1146.1, RULE 1303(B)(2)-OFFSET]

8. THE BURNER SHALL BE EQUIPPED WITH A CONTROL SYSTEM TO AUTOMATICALLY REGULATE COBUSTION AIR, FUEL AND RECIRCULATED FLUE GAS AS THE BOILER LOAD VARIES. THIS AUROMATIC CONTROL SYSTEM SHALL BE ADJUSTED AND TUNED AT LEAST TWICE A YEAR ACCORDING TO THE MANUFACTURERS SPECIFICATIONS TO ASSURE ITS ABILITY TO REPEAT THE SAME PERFORMANCE AT THE SAME FIRING RATE.
[RULE 1146, RULE 1303(b)(2) – OFFSET]

9. RECORDS OF SUCH ADJUSTMENTS TUNE-UPS AND CALIBRATIONS AS STATED IN CONDITION NO. 7 SHALL BE KEPT FOR AT LEAST FIVE YEARS AND MADE AVAILABLE TO THE EXECUTIVE OFFICER UPON REQUEST.
[RULE 1303(b)(2) – OFFSET]

PERIODIC MONITORING

10. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE NOx EMISSION LIMITS EITHER BY: (a) CONDUCTING A SOURCE TEST AT LEAST ANNUALLY USING AQMD METHOD 100.1 OR 7.1; OR (b) CONDUCTING A TEST AT LEAST ANNUALLY USING A

PORTABLE ANALYZER AND AQMD APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH THE RULE 1146 CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT. [RULE 3004(a)(4)]

11. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE CO EMISSION LIMITS EITHER BY: (a) CONDUCTING A SOURCE TEST AT LEAST ANNUALLY USING AQMD METHOD 100.1 OR 7.1; OR (b) CONDUCTING A TEST AT LEAST ANNUALLY USING A PORTABLE ANALYZER AND AQMD APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH THE RULE 1146 CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT. [RULE 3004(a)(4)]

EMISSIONS AND REQUIREMENTS

12. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

NOX: 9 PPMV, RULE 1146
CO: 50 PPMV, RULE 1303(B)(2)
CO: 400 PPMV, RULE 1146
CO: 2,000 PPMV, RULE 407
PM: 0.1 GR/DSCF, RULE 409
[RULE 1146, RULE 407, RULE 409]

A/N 545881, 545882 and 548692– Emergency IC Engines

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW. [RULE 204]

2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES. [RULE 204]

3. THIS ENGINE SHALL NOT OPERATE MORE THAN 200 HOURS IN ANY ONE YEAR, WHICH INCLUDES NO MORE THAN 50 HOURS IN ANY ONE YEAR FOR MAINTENANCE AND TESTING AND NO MORE THAN 4.2 HOURS IN ANY ONE MONTH FOR MAINTENANCE AND TESTING. [RULE 1303(b)(2)-Offset, RULE 1470]

4. AN OPERATIONAL NON-RESETTABLE TOTALIZING TIME METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME.
[RULE 1303(b)(2)-Offset, RULE 1470]

5. THE OPERATION OF ENGINE BEYOND THE 50 HOURS PER YEAR ALLOTTED FOR ENGINE MAINTENANCE AND TESTING SHALL BE ALLOWED ONLY IN THE EVENT OF A LOSS OF GRID POWER OR UP TO 30 MINUTES PRIOR TO A ROTATING OUTAGE, PROVIDED THAT THE ELECTRICAL GRID OPERATOR OR ELECTRIC UTILITY HAS ORDERED ROTATING OUTAGES IN THE CONTROL AREA WHERE THE ENGINE IS LOCATED OR HAS INDICATED THAT IT EXPECTS TO ISSUE SUCH AN ORDER AT A CERTAIN TIME, AND THE ENGINE IS LOCATED IN A UTILITY SERVICE BLOCK THAT IS SUBJECT TO THE ROTATING OUTAGE. ENGINE OPERATION SHALL BE TERMINATED IMMEDIATELY AFTER THE UTILITY DISTRIBUTION COMPANY ADVISES THAT A ROTATING OUTAGE IS NO LONGER IMMINENT OR IN EFFECT.
[RULE 1303(b)(2)-Offset, RULE 1470]

6. AN ENGINE OPERATING LOG SHALL BE KEPT AND SHALL DOCUMENT THE TOTAL TIME THE ENGINE IS OPERATED EACH MONTH AND SPECIFIC REASON FOR OPERATION AS:

   A. EMERGENCY USE.
   B. MAINTENANCE AND TESTING.
   C. OTHER (DESCRIBE THE REASON FOR OPERATING).

   IN ADDITION, EACH TIME THE ENGINE IS MANUALLY STARTED, THE LOG SHALL INCLUDE THE DATE OF OPERATION, THE SPECIFIC REASON FOR OPERATION, AND THE TIME METER READING (IN HOURS AND TENTHS OF HOURS) AT THE BEGINNING AND END OF OPERATION.
   [RULE 1303(b)(2)-Offset, RULE 1470]

7. ON OR BEFORE JANUARY 15TH OF EACH YEAR, THE OPERATOR SHALL RECORD IN THE ENGINE OPERATING LOG THE FOLLOWING:

   A. THE TOTAL HOURS OF OPERATION FOR THE PREVIOUS CALENDAR YEAR, AND
   B. THE TOTAL HOURS OF ENGINE OPERATION FOR MAINTENANCE AND TESTING FOR THE PREVIOUS CALENDAR YEAR.

   ENGINE OPERATING LOG SHALL BE RETAINED ON SITE FOR A MINIMUM OF FIVE CALENDAR YEARS AND SHALL BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR REPRESENTATIVE UPON REQUEST.
   [RULE 1303(b)(2)-Offset, RULE 1470]

8. THIS OPERATOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULE 431.2 AND RULE 1470.
[RULE 431.2, RULE 1470]

9. THIS ENGINE SHALL NOT BE OPERATED FOR NON-EMERGENCY USE BETWEEN THE HOURS OF 7:30 AM AND 3:30 PM ON DAYS WHEN SCHOOL IS IN SESSION.
[RULE 1470]

10. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS ITS EXHAUST IS VENTED TO A DIESEL PARTICULATE FILTER SYSTEM WHICH IS IN FULL OPERATION AND IS IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 1470]

11. THIS ENGINE SHALL NOT BE OPERATED BELOW THE ALLOWABLE PASSIVE REGENERATION TEMPERATURE FOR MORE THAN 12 CONSECUTIVE HOURS (720 MINUTES).
[RULE 1470]

12. THE OPERATOR SHALL REGENERATE THE DIESEL PARTICULATE FILTER AFTER EVERY 24 COLD STARTS AND AFTER EACH 30 MINUTE IDLE SESSIONS.
[RULE 1470]

13. THE DIESEL PARTICULATE FILTER SHALL BE INSPECTED AND CLEANED IF NECESSARY AFTER EVERY 1,000 HOURS OF OPERATION. CLEANING SHALL BE PERFORMED ACCORDING TO THE MANUFACTURER'S RECOMMENDED FILTER MAINTENANCE AND CLEANING PROCEDURES AS SPECIFIED IN THE OPERATIONS AND MAINTENANCE MANUAL.
[RULE 1470]

14. THE OPERATOR SHALL INSPECT THE INTEGRITY OF THE FILTER AFTER EVERY SIX (6) MONTHS AND IF NECESSARY, REPLACE IT.
[RULE 1470]

15. THE OPERATOR SHALL KEEP RECORDS OF DIESEL PARTICULATE FILTER INSPECTIONS, CLEANING, AND REPLACEMENTS. THE OPERATOR SHALL MAINTAIN THESE RECORDS FOR A MINIMUM OF FIVE YEARS AND MAKE THEM AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 1470]

16. REMOVAL OF THE DIESEL PARTICULATE FILTER'S FILTER MEDIA FOR CLEANING MAY ONLY OCCUR UNDER THE FOLLOWING CONDITIONS:

    THE INTERNAL COMBUSTION ENGINE SHALL NOT BE OPERATED FOR MAINTENANCE AND TESTING OR ANY OTHER NON-EMERGENCY USE WHILE THE DIESEL PARTICULATE FILTER MEDIA IS REMOVED; AND

    THE DIESEL PARTICULATE FILTER'S FILTER MEDIA SHALL BE RETURNED AND RE-INSTALLED WITHIN 10 WORKING DAYS FROM THE DATE OF REMOVAL; AND

    THE OWNER OR OPERATOR SHALL MAINTAIN RECORDS INDICATING THE DATE(S) THE DIESEL PARTICULATE FILTER'S FILTER MEDIA WAS REMOVED FOR CLEANING AND THE DATE(S) THE FILTER MEDIA WAS RE-INSTALLED. RECORDS SHALL BE RETAINED FOR A MINIMUM PERIOD OF 5 YEARS.

    [RULE 1470]

A/N 545881:

17. THE EMISSIONS FROM THIS EQUIPMENT SHALL COMPLY WITH THE FOLLOWING LIMITS:

CONTAMINANT	EMISSION LIMIT (GM/BHP-HR)
NITROGEN OXIDES (NOx)+VOLATILE ORGANIC COMPOUNDS(VOC)	4.8
CARBON MONOXIDE (CO)	2.6
PATICULATE MATTER (PM10)	0.004

[RULE 1470]

A/N 545882:

17. THE EMISSIONS FROM THIS EQUIPMENT SHALL COMPLY WITH THE FOLLOWING LIMITS:

CONTAMINANT	EMISSION LIMIT (GM/BHP-HR)
NITROGEN OXIDES (NOx)+VOLATILE ORGANIC COMPOUNDS(VOC)	3.0
CARBON MONOXIDE (CO)	2.6
PATICULATE MATTER (PM10)	0.002

[RULE 1470]

A/N 548692:

17. THE EMISSIONS FROM THIS EQUIPMENT SHALL COMPLY WITH THE FOLLOWING LIMITS:

CONTAMINANT	EMISSION LIMIT (GM/BHP-HR)
NITROGEN OXIDES (NOx)+VOLATILE ORGANIC COMPOUNDS(VOC)	3.0
CARBON MONOXIDE (CO)	2.6
PATICULATE MATTER (PM10)	0.03

[RULE 1470]