

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

July 15, 2015

TO: ✓ Phillip Fielder, P.E., Permits and Engineering Group Manager

THROUGH: RK Richard Kienlen, P.E., Engr. Mgr. II, New Source Permits Section

THROUGH: MR Peer Review

FROM: JPH John Howell, P.E., Existing Source Permit Section

SUBJECT: Evaluation of Permit Application No. **2010-011-O (M-3)**
HP Enterprise Services, LLC
Tulsa Computer Center (TCC) and the Secure Computer Center (SCC)
[SCC TCC Mingo Road Data Centers]
Fac ID #7519
Section 13, Township 21N, Range 13E, Tulsa County, Oklahoma
4000 N. Mingo Road, Tulsa, Tulsa County, OK
Enter through American Airlines main gate (36.20664°N, 95.87061°W)

INTRODUCTION

Applicant operates two adjacent data processing facilities (SIC 7374) within the fence line of the American Airlines Maintenance & Engineering Center in Tulsa: the Tulsa Computer Center (TCC) and the Secure Computer Center (SCC). Applicant operates these facilities under operating permit No. 2010-011-O (M-2), issued March 26, 2013. Applicant requests an updated operating permit subsequent to installation of an additional gas-fired emergency genset rated at 300-kW/402-hp at the TCC site, authorized by Permit No. 2010-011-C (M-3), issued March 9, 2015. The new engine is EPA certified to comply with NSPS Subpart JJJJ. The facility will remain a synthetic minor source.

PROCESS DESCRIPTION

Existing units: Four 1,600-kW rated generator packages have been in service at the SCC since January 1986, powered by 2,144-bhp Caterpillar 3516 diesel engines. Five 1,400-kW rated diesel generator packages have been in service at the TCC since June 1993. Although these generators were rated at 1,600 kW, they were de-rated to 1,400 kW during commissioning because of the radiators selected. They use 2,144-bhp Detroit Diesel engines. A sixth diesel generator was added to the TCC group in 2012. It is rated at 1,750 kW, and is powered by a 2,560-hp Stevenson (originally Detroit Diesel) diesel engine. TCC also contains two 3-MMBTUH natural gas-fired boilers used for humidity control. There are five 10,000-gallon diesel fuel storage tanks and various day tanks. All tanks have submerged fill pipes.

The new unit is a natural gas-fired Kohler genset rated at 300-kW/402-hp, powered by a Doosan D146L 4-cycle engine equipped with a catalytic converter. It will be used to provide emergency power for life safety equipment in the Tulsa Office Complex [TOC] building at the TCC site. Actual usage is forecast to be not more than 40 hours per year.

EXISTING EMERGENCY POWER GENERATOR UNITS

Engine	Serial No.
2,144 hp Caterpillar/3516	25Z00713
2,144 hp Caterpillar/3516	25Z00720
2,144 hp Caterpillar/3516	25Z00721
2,144 hp Caterpillar/3516	25Z00723
2,144 hp Detroit Diesel	16E001585
2,144 hp Detroit Diesel	16E001586
2,144 hp Detroit Diesel	16E001595
2,144 hp Detroit Diesel	16E001594
2,144 hp Detroit Diesel	16E001593
2,560 hp Stevenson (Detroit Diesel)	5262010702

NEW EMERGENCY POWER GENERATOR UNITS

Engine	Serial No.
402-hp Kohler, NG-fired	SGM32CGVF

EMISSIONS

Emission factors from AP-42 (10/96), Tables 3.4-1 and 3.4-3, are used to estimate emissions [See tables on following pages.] from the four Caterpillar and five Detroit Diesel engines. According to footnote "P" of Table 3.4-1, VOC is assumed to represent 91% of TOC. $PM_{2.5}$ is taken to be 93.8% of PM_{10} , based on ratios taken from Table B.2-2 of Appendix B to AP-42 (9/90). Each engine consumes 109.5 gallons per hour (gph) when operating at full capacity.

The facility currently uses Ultra Low Sulfur Diesel [ULSD] fuel for the diesel generators, which contains not more than 0.0015% sulfur by weight, but may have a remaining inventory of 0.5% by weight diesel fuel. For this reason, estimates of SO_2 emissions are based on the higher value. Engine heat input for the diesel engines is based on an assumption of 7,000 BTU/hp-hr. Because these are emergency generators, potential to emit (PTE) is based on 500 hours of operation per engine per year.

Estimated on this basis, PTE for NO_x exceeds the major source threshold. However, the applicant has requested group cumulative emission limits for the nine 2,144-hp Caterpillar/Detroit Diesel engines, and separate emission limits for the 2,560-hp Stevenson (Detroit Diesel) and 402-hp Kohler engines, sufficient to ensure the facility will operate as a synthetic minor source. Total run time for all engines during 2011 was 95 hours.

**POTENTIAL EMISSIONS, 4 CATERPILLAR 3516 AND 5 DETROIT DIESEL,
TOTAL FOR 9 ENGINES**

Pollutant	Factor	Emissions		
		Each Engine		Total (9 engines)
		lb/hr	TPY	TPY
PM ₁₀	0.0007 lb/hp-hr	1.50	0.38	3.38
PM _{2.5}	0.000656 lb/hp-hr	1.41	0.35	3.17
SO ₂	0.004045 lb/hp-hr	8.67	2.17	19.5
NO _x	0.024 lb/hp-hr	51.5	12.9	116
CO	0.0055 lb/hp-hr	11.8	2.95	26.5
VOC	0.000642 lb/hp-hr	1.38	0.34	3.10
HAPs	0.00157 lb/MMBTU	0.02	<.01	0.05

Emission factors for the 1,750 kW/2,560-hp Stevenson engine are taken from a MTU/Detroit Diesel spec sheet for NO_x, VOC [as HC], CO, and PM = PM₁₀ = PM_{2.5}. SO₂ and HAPs are estimated based on AP-42 (10/96), Tables 3.4-1 and 3.4-3, for large stationary diesel engines. Estimates are based on 500 hours of operation per year.

POTENTIAL EMISSIONS, 2,560-HP STEVENSON [DETROIT DIESEL]

Pollutant	Factor	Emissions	
		lb/hr	TPY
PM ₁₀	0.065 g/kWh	0.25	0.06
PM _{2.5}	0.065 g/kWh	0.25	0.06
SO ₂	0.004045 lb/hp-hr	10.35	2.59
NO _x	7.012 g/kWh	27.1	6.76
CO	0.664 g/kWh	2.56	0.64
VOC	0.156 g/kWh	0.60	0.15
HAPs	0.00136 lb/MMBTU ^{1,2}	0.15	0.04

¹Based on BSFC of 7,000 Btu/hp-hr, total heat input @ 100% load is 17.92 MMBTUH.

²Sum of the HAP emission factors in Table 3.4-1, AP-42 (10/96).

Emission factors for the 402-hp Kohler generator are taken from a manufacturer's spec sheet for NO_x, VOC, and CO. SO₂, PM₁₀, and PM_{2.5}, are estimated based on AP-42 (7/00), Table 3.2-2, for four-stroke lean-burn natural gas engines. HAPs are estimated based on the manufacturer's estimate of VOC emissions. The manufacturer's spec sheet indicates the engine uses 2,782 ft³/hr of natural gas fuel, for a total heat input of 2.84 MMBTUH. Estimates are based on 500 hours of operation per year.

POTENTIAL EMISSIONS, 402-HP KOHLER GENERATOR

Pollutant	Factor	Emissions	
		lb/hr	TPY
PM ₁₀	0.0000771 lb/MMBTU	0.0002	0.0000547
PM _{2.5}	0.0000771 lb/MMBTU	0.0002	0.0000547
SO ₂	0.000588 lb/MMBTU	0.0017	0.000417
NO _x	0.10/g/kW-hr	0.066	0.0165
CO	0.08 g/kW-hr	0.053	0.013
VOC	0.06 g/kW-hr	0.040	0.0099
HAPs	0.06 g/kW-hr	0.040	0.0099

The two boilers have combined heat input of 6 MMBTUH. Using manufacturer's emission factors yields 0.44 lb/hr for each boiler (3.84 TPY if both boilers are operated continuously) of CO. Similar calculations yield 0.35 lb/hr for each and 3.09 TPY for combined operation of NO_x.

If each engine were operated 500 hours per year, total fuel handled by the storage tanks would be slightly less than 500,000 gallons per year. Tanks 4.0 modeling of this volume has shown that the fuel storage tanks have negligible emissions.

FEDERAL REGULATIONS

PSD, 40 CFR Part 52

[Not Applicable]

Final total emissions are less than the threshold of 250 TPY of any single regulated pollutant and the facility is not one of the listed stationary sources with a threshold of 100 TPY.

NSPS, 40 CFR Part 60

[Subparts IIII, JJJJ Applicable]

Subparts D, Da, Db, Dc apply to various steam generating units. The two replacement boilers at this facility are smaller than the lowest threshold for any of these regulations, and are not affected facilities.

Subpart Kb applies to volatile organic liquid storage vessels that have a capacity greater than 75 m³ (19,798 gallons). All tanks have capacity less than 75 m³ and are not affected facilities.

Subpart IIII, Stationary Compression Ignition (CI) Internal Combustion Engines (ICE). Except for the 2,560-hp engine associated with the 1,750-kW generator, all engines at the facility were constructed before the earliest date of any applicable section of this subpart and are not affected sources. The Stevenson 2,560-hp engine was manufactured in June 2011 and installed in February 2012. It is a new source per 40 CFR 60.4200(a)(2)(i). Certificate of Conformity CMDDL95.4XTR demonstrates compliance with the emissions requirements of §4205(b).

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI-ICE), promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and numerous manufacture dates. Engine manufacturers are required to certify certain engines to meet the

emission standards and may voluntarily certify other engines. An initial notification is required only for owners and operators of engines greater than 500 HP that are non-certified. The engine which powers the proposed new Kohler genset was manufactured in January 2015 and is a certified unit subject to this subpart.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are only trace amounts of emissions of the regulated pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride.

NESHAP, 40 CFR Part 63

[Subpart ZZZZ Applicable]

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart previously affected only RICE with a site-rating greater than 500 brake horsepower that are located at a major source of HAP emissions. On January 18, 2008, the EPA published a final rule that promulgates standards for new and reconstructed engines (after June 12, 2006) with a site rating less than or equal to 500 HP located at major sources, and for new and reconstructed engines (after June 12, 2006) located at area sources. Owners and operators of new and reconstructed stationary SI-ICE engines at area sources of HAP emissions are required by Subpart ZZZZ to meet the requirements of 40 CFR Part 60, Subpart JJJJ; owners and operators that are in compliance with Subpart JJJJ would also be considered to be in compliance with 40 CFR Part 63, Subpart ZZZZ.

On August 20, 2010, EPA finalized the requirements for stationary SI RICE located at area sources. A summary of these requirements for the four Caterpillar and five Detroit Diesel 2,144-hp engines located at this facility are shown below.

Engine Category	Normal Operation ⁽¹⁾ @ 15% O ₂
4. Emergency stationary CI RICE and black start stationary CI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ¹
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(1) Sources have the option to utilize an oil analysis program as described in §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

The initial compliance date for these engines is October 19, 2013. This permit will require compliance with all applicable requirements of this subpart upon the relevant compliance date for all affected equipment.

The 2,560-hp Stevenson engine is new under Subpart ZZZZ and satisfies the requirements of Subpart ZZZZ through compliance with NSPS Subpart IIII. The engine which powers the proposed new Kohler genset is new under Subpart ZZZZ and satisfies the requirements of Subpart ZZZZ through compliance with NSPS Subpart JJJJ.

Subpart JJJJJ, Industrial, Commercial, and Institutional Boilers at Area Sources of HAPs. The gas-fired boilers are exempt from this subpart per §63.11195(e) and §63.11237.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
 This facility does not process or store more than the threshold quantity of any regulated substance (Section 112r of the Clean Air Act 1990 Amendments). More information on this federal program is available on the web page: www.epa.gov/ceppo.

OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
 Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
 This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations listed in OAC 252:100, Appendix Q. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
 Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in "attainment" of these standards.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]
 Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Required annual information (Turn-Around Document) shall be provided to Air Quality.

OAC 252:100-7 (Permits For Minor Facilities) [Applicable]
 Subchapter 7 sets forth the permit application fees and the basic substantive requirements of permits for minor facilities. Since criteria pollutant emissions are less than 100 TPY for each pollutant, and emissions of Hazardous Air Pollutants (HAP) do not exceed 10 TPY for any one HAP or 25 TPY for any aggregate of HAP, the facility is defined as a minor source. As such, BACT is not required.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
 Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning)

[Applicable]

Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter (PM))

[Applicable]

Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Thus, the genset engines are subject to the requirements of this subchapter. At 15 MMBTUH, Appendix C specifies a PM emission limitation of 0.55 lb/MMBTU for each engine. As shown in the emission calculations above, emissions of PM (as PM₁₀) are equivalent to 0.10 lb/MMBTU, which is in compliance. The newest engine has a limit of 0.52 lb/MMBTU, based on 17.9 MMBTUH. As shown in the emission calculations above, emissions of PM (as PM₁₀) are equivalent to 0.10 lb/MMBTU, which is in compliance. For the small boilers, Table 1.4-2 of AP-42 (7/98), lists the total PM emissions for natural gas to be 7.6 lb/MMft³ or about 0.008 lb/MMBTU, well below the standard.

OAC 252:100-25 (Visible Emissions and Particulates)

[Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

OAC 252:100-29 (Fugitive Dust)

[Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originated in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Based on the information submitted by the applicant, under normal operating conditions, this facility will not cause a problem in this area. Therefore it is not necessary to require specific precautions be taken.

OAC 252:100-31 (Sulfur Compounds)

[Applicable]

Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For liquid fuels the limit is 0.8 lb/MMBTU heat input averaged over 3 hours. Based on the selected emission factors from AP-42 and a sulfur content of 0.5%_{wt}, emissions of sulfur dioxide from the existing engines do not exceed 0.51 lb/MMBTU. Manufacturer's data for the 2,560-p Stevenson engine does not include an emission guarantee for SO₂, so the AP-42 value is used again, and the engine is in compliance. The permit requires the use of fuel with sulfur content less than 0.5%_{wt} for the existing generators, and commercial natural gas for the proposed new unit, to ensure compliance with Subchapter 31.

OAC 252:100-33 (Nitrogen Oxides)

[Not Applicable]

The new equipment standard for emissions of oxides of nitrogen measured as nitrogen dioxide from liquid-fired fuel-burning equipment with a rated heat input of 50 MMBTUH or more is to 0.3

pounds per MMBtu heat input, two-hour maximum. None of the equipment present exceeds the 50 MMBTUH threshold.

OAC 252:100-35 (Carbon Monoxide)

[Not Applicable]

This subchapter affects gray iron cupolas, blast furnaces, basic oxygen furnaces, petroleum catalytic cracking units, and petroleum catalytic reforming units. There are no affected sources.

OAC 252:100-37 (Volatile Organic Compounds)

[Applicable]

Part 3 concerns the control of volatile organic compounds in storage and loading operations. Section 37-15(b) requires existing storage tanks in Tulsa or Oklahoma Counties with a capacity of 400 gallons or more to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. Section 37-4(a) exempts VOCs with vapor pressures less than 1.5 psia under actual storage conditions. The three 10,000-gallon fuel tanks store diesel, which has a vapor pressure less than 1.5 psia at storage conditions, and are therefore exempt from this requirement. Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize VOC emissions. Temperature and available air must be sufficient to provide essentially complete combustion. The engines and boilers are designed to provide essentially complete combustion of organic materials.

OAC 252:100-39 (Organic Compounds, Nonattainment Areas)

[Not Applicable]

This subchapter imposes additional conditions beyond those of Subchapter 37 on emissions of organic materials from new and existing facilities in Tulsa and Oklahoma Counties.

Part 7 concerns Specific Operations.

Section 39-41(b) affects gasoline or VOC storage vessel having a capacity of greater than 400 gallons but less than 40,000 gallons. Section 39-41(e) contains additional requirements for the control of vapors from storage vessels located in Tulsa County having a storage capacity of greater than 2,000 gallons but less than 40,000 gallons and having an average annual throughput of 120,000 gallons or greater of gasoline or other VOCs. Section 39-4 exempts VOCs with vapor pressures less than 1.5 psia under actual storage conditions. The three 10,000-gallon fuel tanks store diesel, which has a vapor pressure less than 1.5 psia at storage conditions, and are therefore exempt from these requirements.

OAC 252:100-42 (Toxic Air Contaminants (TAC))

[Applicable]

This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping)

[Applicable]

This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director

and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

COMPLIANCE

Tier Classification and Public Review

This application has been classified as **Tier I** based on the request for a modification of a minor source that does not change the classification of the source.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the real property.

Inspection

DEQ Regional Office at Tulsa Environmental Specialist Mike Provence performed a full compliance evaluation of the facility on February 16, 2012. All equipment was in place and no violations were noted. A new inspection for the recently installed generator was deemed unnecessary.

Fee Paid

Modified operating permit fee of \$750 has been paid.

SUMMARY

Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues. Issuance of the operating permit is recommended.



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

JUL 17 2015

Larry Fournier, Regional Critical Facilities Operations Manager
HP Enterprise Services, LLC
4000 N. Mingo Road
Tulsa, OK 74116

Re: Permit No. 2010-011-O (M-3)
Tulsa Computer Center and Secure Computer Center
Fac ID #7519
4000 N. Mingo Road, Tulsa, Tulsa County, OK

Dear Mr. Fournier:

Enclosed is the modified permit authorizing operation of the referenced facility. Please note that this permit is issued subject to standard and specific conditions that are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emission inventory for this facility. An emission inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emission Inventory Staff at 405-702-4100.

Thank you for your cooperation in this matter. If we may be of further service, please contact our office at (918) 293-1600. Air Quality personnel are located in the DEQ Regional Office at Tulsa, 3105 E. Skelly Drive, Suite 200, Tulsa, OK, 74105.

Sincerely,

A handwritten signature in black ink, appearing to read "John Howell", is written over a horizontal line.

John Howell, P.E.
Existing Source Permits Section
AIR QUALITY DIVISION





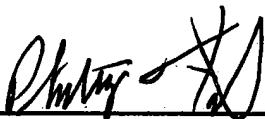
PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2010-011-O (M-3)

HP Enterprise Services, LLC,

having complied with the requirements of the law, is hereby granted permission to operate the SCC TCC Mingo Road Data Centers at 4000 N. Mingo Road, Tulsa, Tulsa County, Oklahoma [Section 13, Township 21N, Range 13E, Tulsa County, Oklahoma], subject to standard conditions dated July 12, 2012, and specific conditions, both attached.



Phillip Fielder, P.E.

Permits and Engineering Group Manager

7/16/2015

Date

**PERMIT TO OPERATE
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**HP Enterprise Services, LLC
Tulsa Computer Center and Secure Computer Center**

Permit No. 2010-011-O (M-3)

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on July 8, 2015. The Evaluation Memorandum dated July 15, 2015, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

1. The following emission units are permitted for operation at these co-located facilities.

EMERGENCY POWER GENERATOR UNITS

Engine Manufacturer/Model	Serial No.
2,144 hp Caterpillar/3516	25Z00713
2,144 hp Caterpillar/3516	25Z00720
2,144 hp Caterpillar/3516	25Z00721
2,144 hp Caterpillar/3516	25Z00723
2,144 hp Detroit Diesel	16E001585
2,144 hp Detroit Diesel	16E001586
2,144 hp Detroit Diesel	16E001595
2,144 hp Detroit Diesel	16E001594
2,144 hp Detroit Diesel	16E001593
2,560 hp Stevenson (Detroit Diesel)	5262010702
402-hp Kohler, NG-fired	SGM32CGVF

Two 3-MMBTUH natural gas-fired boilers, authorized to operate 24-hours/day, every day of the year.

2. The permittee shall be authorized to operate any combination of the engines listed above for a cumulative total of 3,760 hours per year, including monthly test runs. Each unit is specifically limited to no more than 500 hours of operation per year, with all limits based on a 12-month rolling total. The emission limitations follow.

ENGINE EMISSIONS (11 ENGINES)

Total Emissions	NO_x	CO	SO₂	TOC	PM₁₀
lbs/hr/2,144-hp engine, each	51.5	11.8	8.67	1.38	1.50
lbs/hr/2,560-hp engine, each	27.1	2.56	10.35	0.60	0.25
lbs/hr/402-hp engine	0.066	0.053	---	0.040	---
TPY @ 3,760 total hrs/yr	96.8	22.2	16.7	2.02	2.82

There are no requirements for the small boilers, but the facility is limited to those equipment items as they exist.

3. Upon issuance of this permit, the facility shall purchase only No. 2 grade diesel fuel containing not more than 0.0015% by weight sulfur for use in the diesel-powered generators. The facility is permitted to use any remaining stock of diesel fuel on hand containing higher levels of sulfur.

The Kohler generator shall be fueled only with commercial natural gas. Natural gas-fired equipment shall be fired with pipeline quality natural gas. Compliance can be shown by the following methods: for pipeline grade natural gas, a current gas company bill; for liquid fuel, a delivery ticket. Compliance with fuel sulfur limits for gas fuels shall be demonstrated at least once per calendar year.

4. A serial number or other acceptable form of permanent (non-removable), readily accessible identification shall be on the engines.

5. Each of the permitted emergency power generator units listed in Specific Condition 1 shall be equipped with a non-resettable hour meter.

6. The owner/operator shall comply with all applicable requirements of the NSPS for Stationary Spark Ignition Internal Combustion Engines (SI ICE), Subpart JJJJ, for the Kohler generator, including but not limited to the following.

- a. § 60.4230 Am I subject to this subpart?
- b. § 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
- c. § 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?
- d. § 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?
- e. § 60.4236 What is the deadline for importing or installing stationary SI ICE produced in the previous model year?
- f. § 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?
- g. § 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
- h. § 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?
- i. § 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
- j. § 60.4246 What parts of the General Provisions apply to me?
- k. § 60.4248 What definitions apply to this subpart?

7. The 2,560-hp Stevenson engine installed in 2012 is an affected facility under NSPS Subpart IIII, and shall comply with all sections including, but not necessarily restricted to, the following.

- | | |
|-----------------------------------|--------------------|
| a. §60.4200 | Applicability |
| b. §60.4201, 02, 03, 04, 05, & 06 | Emission standards |
| c. §60.4207 | Fuel requirements |

- d. §60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?
- e. §60.4209 Monitoring requirements
- f. §60.4210 & 11 Compliance requirements
- g. §60.4212 & 13 Test methods and other procedures
- h. §60.4214 Notification, reporting, and recordkeeping requirements
- i. §60.4215 & 16 Engines used in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and Alaska
- j. §60.4217 Emission standards for engines using special fuels
- k. §60.4218 General Provisions
- l. §60.4219 Definitions
- m. Appendices Eight tables for various purposes

8. All engines are affected facilities under NESHAP Subpart ZZZZ and shall comply with all sections including, but not necessarily restricted to, the following.

- a. §63.6580, 6585, 6590 Applicability.
- b. §63.6595 When do I have to comply with this subpart?
- c. §63.6603, 6605 What emission limitations and operating limitations apply?
- d. §63.6615, 6620 Performance tests and procedures.
- e. §63.6625 What are my monitoring, installation, operation, and maintenance requirements?
- f. §63.6630, 6635, 6640 Demonstrating initial and continuous compliance with emission and operating limitations.
- g. §63.6645, 6650, 6655, 6660 Notifications, reporting, and recordkeeping
- h. §63.6665 What parts of the General Provisions apply to me?
- i. §63.6670 Who implements and enforces this subpart?
- j. §63.6675 What definitions apply to this subpart?

9. The permittee shall keep the following records of operations:

- a. Monthly and 12-month rolling totals of the operating hours separately for each generator engine.
- b. Fuel delivery tickets showing the maximum weight percent of sulfur for all diesel fuel deliveries.
- c. Records of natural gas fuel sulfur content as required by Specific Condition 3.
- d. Records as required by NSPS Subparts IIII, JJJJ; records as required by NESHAP Subpart ZZZZ.

These records shall be retained on-site for a period of at least five years following dates of recording, and shall be made available to regulatory personnel upon request.

10. Upon issuance of this permit, all previous Air Quality operating permits for this facility are cancelled.

**MINOR SOURCE PERMIT TO OPERATE / CONSTRUCT
AIR POLLUTION CONTROL FACILITY
STANDARD CONDITIONS
(July 12, 2012)**

- A. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ) in accordance with and under the authority of the Oklahoma Clean Air Act. The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. This specifically includes compliance with the rules of the other Divisions of DEQ: Land Protection Division and Water Quality Division.
- B. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-7-15(g)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-7-15]
- C. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-7-18(a)]
- D. Unless specified otherwise, the term of an operating permit shall be unlimited.
- E. Notification to the Air Quality Division of DEQ of the sale or transfer of ownership of this facility is required and shall be made in writing by the transferor within 30 days after such date. A new permit is not required. [OAC 252:100-7-2(f)]
- F. The following limitations apply to the facility unless covered in the Specific Conditions.
1. No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility.
[OAC 252:100-3]
 2. All facilities that emit air contaminants are required to file an emission inventory and pay annual operating fees based on the inventory. Instructions and forms are available on the Air Quality section of the DEQ web page. www.deq.state.ok.us [OAC 252:100-5]
 3. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-9]
 4. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning subchapter.
[OAC 252:100-13]
 5. No particulate emissions from new fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lbs/MMBTU. [OAC 252:100-19]
 6. No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. [OAC 252:100-25]

7. No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]
8. No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lbs/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
9. Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with an organic material vapor-recovery system. [OAC 252:100-37-15(b)]
10. All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

G. Any owner or operator subject to provisions of NSPS shall provide written notification as follows: [40 CFR 60.7 (a)]

1. A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
2. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
3. A notification of the actual date of initial start-up of an affected facility postmarked within 15 days after such date.
4. If a continuous emission monitoring system is included in the construction, a notification of the date upon which the test demonstrating the system performance will commence, along with a pretest plan, postmarked no less than 30 days prior to such a date.

H. Any owner or operator subject to provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]

I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by this subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least five years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (f)]

J. Any owner or operator subject to the provisions of NSPS shall conduct performance test(s) and furnish to AQD a written report of the results of such test(s). Test(s) shall be conducted

within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial start-up. [40 CFR 60.8]