

Andrew Millspaugh

From: Patel, Yasmini M (DEC) <yasmini.patel@dec.ny.gov>
Sent: Friday, September 15, 2023 2:05 PM
To: Andrew Millspaugh; Sierzenga, Paul M (DEC)
Cc: rapy@northeasternbiochar.com; Bryce Meeker
Subject: RE: Emergency Generator

Categories: Projects

Hi Andrew,

Yes, this information is sufficient to confirm the generators as exempt and not subject to permitting. I updated the emission summary to include generators emission.

Thank You

Yasmini Patel

Assistant engineer

Region 5, Division of Air Resources

New York State Department of Environmental Conservation

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Department of
Environmental
Conservation



From: Andrew Millspaugh <Andrew.Millspaugh@sterlingenvironmental.com>

Sent: Thursday, September 14, 2023 6:12 PM

To: Sierzenga, Paul M (DEC) <paul.sierzenga@dec.ny.gov>

Cc: Patel, Yasmini M (DEC) <yasmini.patel@dec.ny.gov>; rapy@northeasternbiochar.com; Bryce Meeker <bmeeker@northeasternbiochar.com>

Subject: RE: Emergency Generator

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Paul,

Attached is the spec sheet for the anticipated generator. Emissions under standby use are on Page 2. The table below calculates potential emissions at 1 hour per week (for weekly exercise) and at 500 hours per year as requested. There will be 1 generator per process line (3 generators at full buildout). The generators will be for emergency use only in the event of loss of grid power. During generator use, biosolids processing will cease and process emissions will stop. The purpose of the generators is to allow process equipment to shut down and to continue to operate the biofilter for odor control. As shown, 3 generators running 1 hour per week are expected to emit less than 1 ton of NOx combined. 3 generators running 500 hours per week are expected to emit less than 10 tons of NOx combined. These emission rates do not push the facility above the major facility threshold. Pursuant to your email below and 6 NYCRR 201-5.2(b)(3), is

this information sufficient to confirm the generators as exempt and not subject to permitting such that the permit application does not need to be revised?

	Emission Factor	Generator Size	Emission Rate			1 generator			
						52 hr/yr	52 hr/yr	500 hr/yr	500
	g/hp-hr	HP	g/hr	mg/hr	lb/hr	lb/yr	ton/yr	lb/yr	to
Particulate Matter (PM)	0.03	1,006	30.17	30,173	0.07	3.46	0.00	33.26	0
Nitrogen Oxides (NOx)	5.42	1,006	5,451	5,451,273	12.0	624.9	0.31	6,009	3
Hydrocarbons	0.06	1,006	60.35	60,346	0.13	6.92	0.00	66.52	0
Carbon Monoxide (CO)	0.22	1,006	221.27	221,269	0.49	25.37	0.01	243.9	0

Thanks,

Andrew M. Millspaugh, P.E.
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From: Sierzenga, Paul M (DEC) <paul.sierzenga@dec.ny.gov>
Sent: Thursday, September 14, 2023 1:03 PM
To: Andrew Millspaugh <Andrew.Millspaugh@sterlingenvironmental.com>
Cc: Patel, Yasmini M (DEC) <yasmini.patel@dec.ny.gov>
Subject: Emergency Generator

Andrew,

In discussing the emergency generators, they are exempt from permitting (with conditions) but their emissions need to be included in the Potential To Emit (PTE) calculations per Part 201-3:

201-3.1 Applicability.

- (a) Except as provided in subdivisions (c) and (d) of this section, an emission source listed as an exempt or trivial activity in this Subpart is exempt from the registration and permitting provisions of Subparts 201-4, 201-5, and 201-6 of this Part. This does not mean that these activities are exempted from other applicable requirements or from applicable registration and/or permitting requirements of local air pollution control agencies.
- (b) Unless otherwise provided for in this Chapter, emissions from exempt activities **must be included in potential to emit calculations** when determining whether a facility or emission source is subject to:
 - (1) title V facility permitting pursuant to Subpart 201-6 of this Part; and/or
 - (2) new source review pursuant to Part 231 of this Title.

Since you mentioned the generators are primarily for the bioscrubbers to keep facility under negative pressure and the rest of the processes will not be running, can you please add a section to the submittal stating this fact. We do need the emissions addressed, so please add 500 hours of generator emissions to the facility PTE to demonstrate the facility is not subject to Title V or NSPS regulations, or if needed you can list the change in emissions for each hour the generators may run to show the thresholds are not exceeded.

Thanks
 Paul

Paul Sierzenga, P.E. |he/him/his
Regional Air Pollution Control Engineer
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Standby & Prime: 60Hz



Image shown might not reflect actual configuration

Engine Model	Cat® C18 ATAAC™ In-line 6, 4-cycle diesel
Bore x Stroke	145mm x 183mm (5.7in x 7.2in)
Displacement	18.13 L (1106.3 in³)
Compression Ratio	14:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	Electronic Unit Injection
Governor	Electronic ADEM™ A4

Model	Standby	Prime	Emission Strategy
C18	750 ekW, 938 kVA	680 ekW, 850 kVA	EPA TIER II

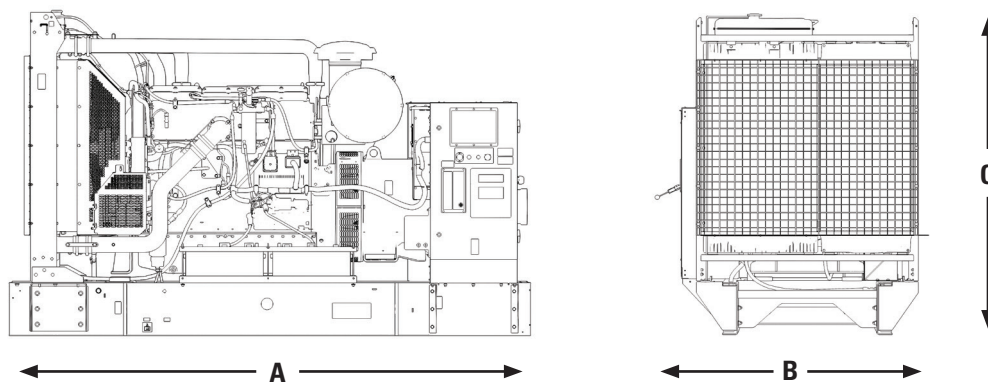
PACKAGE PERFORMANCE

Performance	Standby	Prime
Frequency	60 Hz	
Genset Power Rating	938 kVA	850 kVA
Genset power rating with fan @ 0.8 power factor	750 ekW	680 ekW
Emissions	EPA TIER II	
Performance Number	EM3842	EM3843
Fuel Consumption		
100% load with fan, L/hr (gal/hr)	205.5 (54.2)	188.5 (49.7)
75% load with fan, L/hr (gal/hr)	164.3 (43.4)	146.3 (38.6)
50% load with fan, L/hr (gal/hr)	108.9 (28.7)	100.3 (26.5)
25% load with fan, L/hr (gal/hr)	63.5 (16.7)	59.4 (15.6)
Cooling System¹		
Radiator air flow restriction (system), kPa (in. Water)	0.12 (0.48)	0.12 (0.48)
Radiator air flow, m³/min (cfm)	900 (31783)	900 (31783)
Engine coolant capacity, L (gal)	20.8 (5.5)	20.8 (5.5)
Radiator coolant capacity, L (gal)	77 (20.3)	77 (20.3)
Total coolant capacity, L (gal)	97.8 (25.8)	97.8 (25.8)
Inlet Air		
Combustion air inlet flow rate, m³/min (cfm)	67.3 (2376)	65.6 (2316)
Max. Allowable Combustion Air Inlet Temp, °C (°F)	49 (120)	49 (120)
Exhaust System		
Exhaust stack gas temperature, °C (°F)	452.9 (847.2)	432.9 (811.2)
Exhaust gas flow rate, m³/min (cfm)	170.7 (6028)	161 (5686)
Exhaust system backpressure (maximum allowable) kPa (in. water)	10.0 (40.0)	10.0 (40.0)
Heat Rejection		
Heat rejection to jacket water, kW (Btu/min)	225 (12795)	208 (11828)
Heat rejection to exhaust (total) kW (Btu/min)	714 (40604)	664 (37761)
Heat rejection to aftercooler, kW (Btu/min)	272 (15468)	253 (14387)
Heat rejection to atmosphere from engine, kW (Btu/min)	142 (8075)	123 (6995)

Emissions (Nominal) ²	Standby	Prime
NOx, mg/Nm ³ (g/hp-hr)	2468 (5.42)	2213 (4.91)
CO, mg/Nm ³ (g/hp-hr)	100.1 (0.22)	75.6 (0.17)
HC, mg/Nm ³ (g/hp-hr)	23.5 (0.06)	24.1 (0.06)
PM, mg/Nm ³ (g/hp-hr)	11.7 (0.03)	10.6 (0.03)

Alternator ³					
Voltages	208V	220V	240V	480V	600V
Motor starting capability @ 30% Voltage Dip	1917 skVA	2129 skVA	2501 skVA	2512 skVA	2512 skVA
Current	2602.2 amps	2460.3 amps	2512 amps	1127.6 amps	902.1 amps
Frame Size	LC7224N	LC7224L	LC7224L	LC7224L	LC7224L
Excitation	AREP	AREP	AREP	AREP	AREP
Temperature Rise	130 °C	130 °C	130 °C	105 °C	130 °C

WEIGHTS & DIMENSIONS



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3512 (138)	1746 (69)	2322 (92)	4863 (10721)

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

PRIME: Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

DEFINITIONS AND CONDITIONS

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

³ UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

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