

Regulation No. 44: Emissions Standards for Stationary Generators

1.0 General.

1.1 Purpose. The purpose of this regulation is to ensure that emissions of nitrogen oxides (NO_x), nonmethane hydrocarbons (NMHC), particulate matter (PM), carbon monoxide (CO), and carbon dioxide (CO₂) from generators in the State of Delaware do not adversely impact public health, safety, and welfare, to include causing or contributing to a violation of the health based ozone or particulate matter National Ambient Air Quality Standards.

1.2 Applicability. This regulation applies to each new and existing stationary generator.

1.3 Dates.

1.3.1 The owner of an existing affected generator shall comply with the requirements of this regulation by [insert date 6 months after the effective date].

1.3.2 The owner of a new generator shall comply with the requirements of this regulation by [insert effective date].

2.0 Definitions. The following words and terms, when used in this regulation, shall have the following meanings:

“*Biodiesel*” means a domestic, renewable fuel for diesel engines derived from natural oils like soybean oil, and which meets the specifications of ASTM D 6751-03a, “Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels,” ASTM International, hereby incorporated by reference.

“*Biodiesel Blend*” means a blend of biodiesel and diesel fuel, designated BXX, where XX represents the volume percentage of biodiesel fuel in the blend. Pure biodiesel is designated as B100.

“*Department*” means Department of Natural Resources and Environmental Control as defined in Title 29, Delaware Code, Chapter 80, as amended.

“*Diesel fuel*” means any fuel sold in any state or Territory of the United States and suitable for use in diesel motor vehicles, diesel motor vehicle engines, or diesel nonroad engines, and which is commonly or commercially known or sold as diesel fuel.

“*Emergency*” means either of the following:

- a. an electric power outage due to a failure of the electrical grid, on-site disaster, local equipment failure, or public service emergencies such as flood, fire, or

natural disaster; or

- b. [This section is reserved for the inclusion of an “emergency event” declared by PJM as an emergency, as well. This section is being left out until PJM can adequately provide a definition of an “emergency event” and under what specific circumstances it will be declared. If this section is included, the Department must concur with the declaration of the “emergency event” before participants in PJM’s Emergency Response Program shall be allowed to operate. Violators shall be subject to penalties and fines as determined by the Department.]

“*Emergency generator*” means a generator used only during an emergency, during testing, or for maintenance purposes. An emergency generator must not be operated in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator (e.g., Conectiv, Delaware Electric Cooperative, PJM, etc.), except for PJM’s Emergency Load Response Program as defined in the definition of emergency.

“*Existing*” means a generator which is not new.

“*Gaseous fuel*” means a fuel which is neither solid nor liquid, and includes but is not limited to natural gas, propane, landfill gas, waste gas, and anaerobic digester gas.

“*Generator*” means an internal combustion engine and associated equipment that converts primary fuel (including fossil fuels and renewable fuels) into electricity, or electricity and thermal energy, except for a combustion turbine in which expanding gases from the combustion chamber drive the blades of a turbine.

“*Landfill gas*” means gas generated by the decomposition of organic waste deposited in a landfill (including municipal solid waste landfills) or derived from the evolution of organic compounds in the waste.

“*New*” means a generator which:

- a. is installed on or after [insert effective date],
- b. is reconstructed on or after [insert effective date], or
- c. begins operating in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator (e.g., Conectiv, Delaware Electric Cooperative, PJM, etc.) on or after September 21, 2003.

“*Non-emergency generator*” means a generator that is not an emergency generator.

“*Owner*” means the owner of, or person responsible for, a generator.

“*Reconstructed*” means the replacement of components of a generator to such an extent that

- a. the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to purchase and install a comparable new generator; and
- b. it is technologically and economically feasible to meet the applicable standards in this regulation.

“*Standby power rating*” means the amount of power generation a generator is capable of supplying during a power outage for the duration of the interruption.

“*Stationary*” means an internal-combustion engine which is not propelled or intended to be propelled while performing its function, that is used either in a fixed application, or in a portable (or transportable) application in which the engine will stay at a single property (which includes the land, the buildings, and all improvements thereon) for more than 12 consecutive months.

“*Supplier*” means a person or firm that manufactures, assembles, or otherwise supplies generators.

“*US EPA*” means the United States Environmental Protection Agency.

“*Waste gas*” means manufacturing or mining byproduct gases that are not used and are otherwise flared or incinerated. A manufacturing or mining byproduct is a material that is not one of the primary products of a particular manufacturing or mining operation, is a secondary and incidental product of the particular operation, and would not be solely and separately manufactured or mined by the particular manufacturing or mining operation. The term does not include an intermediate manufacturing or mining product which results from one of the steps in a manufacturing or mining process and is typically processed through the next step of the process within a short time.

3.0 Emissions. A generator shall not exceed the following standards (in pounds per megawatt-hour (lbs/MWh) of electricity output).

3.1 New emergency generator. A new emergency generator shall meet the applicable emissions standards set by the US EPA for non-road engines (40 CFR 89, 90, 91, 92, 94, or 1048 July 1, 2003 Edition) at the time of installation.

3.2 Existing non-emergency generator.

3.2.1 Except as provided for in Section 3.2.2 of this regulation, an existing non-emergency generator shall meet the following emission standards:

Pollutant	Emission Standard In lbs/MWh
Nitrogen Oxides:	4.0
Nonmethane Hydrocarbons	1.9
Particulate Matter	0.7
Carbon Monoxide	10
Carbon Dioxide:	1,900

3.2.2 As an alternative to the owner, an existing non-emergency generator which meets all of the following requirements shall be exempt from the emission standards of 3.2.1:

3.2.2.1 The generator is equipped with a Rentar Fuel Catalyst, or an alternative emission control strategy approved by the Department;

3.2.2.2 It combusts a gaseous fuel, or a biodiesel blend;

3.2.2.3 It participated in Delaware Electric Cooperative's Interruptible Service Program prior to September 21, 2003 and continues to participate to the current day; and

3.2.2.4 It has a standby power rating equal to or less than 450 kW.

3.3 New non-emergency generator. A new non-emergency generator shall meet the following emission standards:

Pollutant	Emission Standards in lbs/MWh	
	Installed on or After [Effective Date]	Installed on or After January 1, 2008
Nitrogen Oxides:	0.6	0.3
Nonmethane Hydrocarbons	0.3	0.15
Particulate Matter	0.7	0.07
Carbon Monoxide	10	2
Carbon Dioxide:	1,900	1,900

3.4 By [insert date 6 years after the effective date] the Department shall complete a review of the state of and expected changes in technology and emissions rates. This review shall be used by the Department in considering whether these standards should be amended to ensure the continued improvement of the ambient air quality of the State of Delaware. Any amendment to these standards shall be in accordance with the requirements of 7 Del. Code, Chapter 60 and 29 Del. Code, Chapter 101.

4.0 Operating Requirements

4.1 An existing or new emergency generator shall not operate more than 50 hours

during any 12 consecutive months for maintenance or testing purposes.

- 4.2 Any generator (*i.e.*, new and existing) may operate for an unlimited amount of hours during an emergency.
- 4.3 No generator may be used for testing on a day which has been declared by the Department as an “Ozone Action Day.”

5.0 Fuel Requirements.

- 5.1 Diesel fuel or a biodiesel blend, combusted in a generator, shall have a sulfur content equal to or less than:
 - 5.1.1 0.05% by weight, before July 15, 2006; and
 - 5.1.2 0.0015% by weight, on and after July 15, 2006.
- 5.2 **Biodiesel.** A biodiesel blend combusted in a generator shall be a biodiesel blend of B5 or greater.
- 5.3 **Gaseous Fuels.** Gaseous fuels combusted in a generator shall contain no more than ten grains total sulfur per 100 dry standard cubic feet.

6.0 Record Keeping and Reporting.

- 6.1 **Record-Keeping Requirements.** On the property where the generator is installed, or at such other place as the Department approves in writing, the owner of a generator shall maintain the following records:
 - 6.1.1 Monthly and annual amounts of fuel or fuels, consumed by a non-emergency generator. Annual fuel consumption shall be calculated and recorded each calendar month by recording (for each fuel) the current calendar month’s fuel consumption and adding it to those of the previous eleven months.
 - 6.1.2 Monthly and annual operating hours for a generator.
 - 6.1.2.1 The date, duration, and type of fuel used (*e.g.*, natural gas, diesel, propane, biodiesel, etc.) shall be recorded for operating hours, as they occur.
 - 6.1.2.2 Annual operating hours during which maintenance or testing occurred shall be calculated and recorded each calendar month by recording the current calendar month’s operating hours and adding them to those of the previous eleven months. A description of the maintenance or testing shall be recorded at the time of operation.

6.1.2.3 Annual operating hours during which an emergency occurred shall be calculated and recorded each calendar month by recording the current calendar month's operating hours and adding them to those of the previous eleven months. A description of the emergency shall be recorded when a generator is operated during an emergency.

6.1.2.4 All other annual operating hours shall be calculated and recorded each calendar month by recording the current calendar month's operating hours and adding them to those of the previous eleven months. A reason or purpose for the operating hours shall be recorded at the time of operation.

6.1.3 For each shipment of liquid fuel (other than liquefied petroleum gas), received for use in a generator, a shipping receipt and certification shall be obtained from the fuel supplier which identifies:

6.1.3.1 the type of fuel delivered;

6.1.3.2 the percentage of sulfur in the fuel (by weight dry basis), and the method used by the fuel supplier to determine the sulfur content; and

6.1.3.3 the percent by volume of biodiesel if the fuel is a biodiesel blend.

6.2 Availability of Records. The owner shall maintain each record required by Section 6.1 for a minimum of five years after the date the record is made. An owner shall promptly provide the original or a copy of a record or records to the Department upon request.

7.0 Emissions Certification, Compliance, and Enforcement.

7.1 Emissions Certification. [insert paragraph detailing emissions certification]

7.2 Testing.

7.2.1 Emissions. An owner of a generator that is not certified under the terms of Section 7.1, or a generator that is not certified under the US EPA Nonroad standards pursuant to Section 3.1, shall demonstrate compliance with this regulation through on-site testing using procedures set out in [insert reference to testing procedures].

7.2.2 Sulfur Content. Sulfur limits pursuant to Section 5.1 shall be determined using the applicable sampling and testing methodologies set forth in 40 CFR 80.580 (July 1, 2003).

- 7.3 Monitoring.** If a non-emergency generator is supplied with fuel from more than one tank or if it and multiple sources (engines and other devices that use the fuel) are supplied fuel by one fuel tank, a non-resettable fuel metering device shall be used to continuously monitor the fuel consumption by the generator.
- 7.4 Duty to Comply.** An owner shall comply with the requirements of this regulation. Neither certification nor compliance with this regulation relieves owners from compliance with all other applicable state and federal regulations.
- 7.5 Enforceability.** This regulation is enforceable by the Department as provided by law.