

State of New Jersey

Department of Environmental Protection Air Quality Permitting

General Permit

Emergency Generator(s)

First Revision – Operative February 5, 2007

This General Permit allows for the construction, installation, reconstruction, modification and operation of:

- ◆ a **single** stationary reciprocating internal combustion engine Emergency Generator with a maximum rated heat input to the burning chamber of less than 80 million BTU per hour.
OR
- ◆ **multiple** stationary reciprocating internal combustion engine Emergency Generators with a **combined** maximum rated heat input to the burning chamber of less than 80 million BTU per hour.

The potential-to-emit (PTE) for the equipment covered under this General Permit shall be established based on the General Permit Number selected by the Permittee on the Registration Form.

Each facility may possess only one GP-005 at any time. If a facility wants to make a change to a source, which has been registered under GP-005, a new general permit registration is required. New, additional or replacement sources require a new General Permit registration that will supercede the existing general permit.

This General Permit is applicable to Emergency Generators burning the following fuels:
Number two fuel oil, diesel, kerosene, natural gas and propane.

I. DEFINITIONS

The terms used in this General Permit shall have the meanings given to them in N.J.A.C. 7:27-et seq. and/or as listed below except those noted by an asterisk:

"Emergency" means any situation that arises from sudden and reasonably unforeseeable events beyond the control of an owner or operator of a facility, such as an unforeseen system capacity shortage caused by an act of God, that requires immediate corrective action to prevent system collapse or to restore normal operations at the facility

"Emergency Generator" means a combustion source that (this definition includes fire pumps):

1. Is located at a facility and produces mechanical or thermal energy, or electrical power exclusively for use at the facility;
2. Is the source of mechanical or thermal energy, or electrical power during an emergency when the primary source of energy is unavailable; and
3. Is operated only:
 - i. During the performance of normal testing and maintenance procedures, as recommended in writing by the manufacturer and/or as required in writing by a Federal or State law or regulation *;
 - ii. When there is a power outage or the primary source of mechanical or thermal energy fails because of an emergency; or
 - iii. When there is a voltage reduction issued by PJM and posted on the PJM internet website (www.pjm.com) under the "emergency procedures" menu.

* If written manufacturer's recommendations are not available, the use of a facility's own written Standard Operating Procedure manual shall be allowed to determine the recommended normal testing and maintenance hours.

II. AUTHORITY

This General Permit is issued under the authority of N.J.S.A 26:2C-9.2. This General Permit shall allow for inspection and evaluation to assure conformance with all provisions of N.J.A.C. 7:27 et seq. An opportunity for public comment on this General Permit was provided on March 6, 2006.

III. APPLICABILITY

This General Permit allows for the construction, installation, reconstruction, modification and operation of:

- ◆ a **single** stationary reciprocating internal combustion engine Emergency Generator with a maximum rated heat input to the burning chamber of less than 80 million BTU per

hour.
OR

- ◆ **multiple** stationary reciprocating internal combustion engine Emergency Generators with a **combined** maximum rated heat input to the burning chamber of less than 80 million BTU per hour.

This general permit allows for operation during the following:

1. An emergency, allowable at any time.
2. A voltage reduction / brownout, allowable at any time.
3. Normal testing and maintenance, allowable only when air quality forecasts are moderate or good.
4. Mandatory testing and maintenance operation required by federal or state law, allowable at any time.

The potential-to-emit (PTE) for the equipment covered under this General Permit shall be established based on the General Permit Number selected by the Permittee on the Registration Form.

Each facility may possess only one GP-005 at any time. If a facility wants to make a change to a source, which has been registered under GP-005, a new general permit registration is required. New, additional or replacement sources require a new General Permit registration that will supercede the existing general permit.

This General Permit is applicable to Emergency Generators burning the following fuels:
Number two fuel oil, diesel, kerosene, natural gas and propane.

IV. EXCLUSIONS

This general permit can not be used to register the following equipment:

1. For boilers and turbines.
2. Emergency Generators burning liquid fuel with a displacement greater than 30 liters per cylinder.
3. Emergency Generators that combust fuels such as No.4, No. 5 or No.6 fuel oil, crankcase oil, spec-oil, or any other used oils, landfill or refinery gas, facility byproducts, or any other type of waste materials, exclusively or in mixtures with commercial fuels;

This general permit does not allow for the use of the following:

1. For load shaving, peaking power production, or generation in an agreement with a utility energy assistance program.
2. In a circumstance other than an emergency, voltage reduction, or testing / maintenance.
3. For normal testing and maintenance procedures on days when the Department forecasts air quality anywhere in New Jersey to be “unhealthy for sensitive groups,” “unhealthy,” “very unhealthy” or “hazardous” as defined in the U.S. EPA’s Air Quality Index, at <http://www.airnow.gov>, incorporated herein by reference, as amended and supplemented.
The procedure for determining the air quality forecasts for New Jersey are available at:
 - ◆ the Department’s air quality permitting website at: www.state.nj.us/dep/aqpp/aqforecast,
 - ◆ local television broadcasts,
 - ◆ local radio broadcasts,
 - ◆ local newspaper reports.
4. As a source of energy or power after the primary energy or power source has become operable again. If the primary energy or power source is under the control of the owner or operator of the Emergency Generator, the owner or operator shall make a reasonable, timely effort to repair the primary energy or power source.

V. EQUIPMENT SPECIFICATIONS

- ◆ The Permittee shall retain on site the following records for each piece of equipment:
 1. The maximum rated heat input to the burning chambers of the engine, in millions of BTU per hour, per manufacturer’s specifications, or the nameplate power output rating of the generator, and
 2. Written manufacturer’s specifications or written standard operating procedures prepared by the owner or operator.
- ◆ The following Emergency Generators combusting liquid fuel shall be certified to the emissions standards outlined at the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS III) for owners and operators specified at 40 CFR 60.4205:
 1. Model year 2007 and later Emergency Generators (in case of fire pumps during or after a model year listed at Table 3 of NSPS III.)
 2. Engines ordered after July 11, 2005 and manufactured after April 1, 2006 or fire

pumps manufactured after July 11, 2006.

3. Pre – 2007 model year engines that are reconstructed ⁽ⁱ⁾ or modified ⁽ⁱⁱ⁾ after July 11, 2005.

◆ Emergency Generators manufactured after April 1, 2006 (if a fire pump – after July 1, 2006) or modified or reconstructed after July 11, 2005 shall use liquid fuel containing no more than:

1. 500 ppm (0.05%) sulfur beginning October 1, 2007, and
2. 15 ppm (0.0015 %) sulfur beginning October 1, 2010.

◆ Emergency Generators manufactured after April 1, 2006 (if a fire pump – after July 1, 2006) or modified or reconstructed after July 11, 2005 shall use fuel that contains either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

VI. POTENTIAL TO EMIT

The Options Table provides the Permittee with a potential-to-emit (PTE), in tons per year, for each air contaminant category. The Permittee will select their annual hours for normal testing and maintenance based on either the hours recommended in writing by the manufacturer, the use of a facility’s own written standard operating procedure, or the requirements of a federal or state law or regulation.

The annual operating hours for normal testing and maintenance selected by the Permittee in the Options Table shall be the maximum allowed for each piece of equipment in this General Permit.

The potential to emit is based on normal testing and maintenance operation only.

If a facility is permitting multiple Emergency Generators on this General Permit, then the column labeled “Total Capacity of All Equipment” shall be the sum total of the maximum

(i) 40 CFR 60.15 “*Reconstruction*” means the replacement of components of an existing facility to such an extent that:

- (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and
- (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(ii) 40 CFR 60.14 “*Modification*” means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

The potential to emit is based on normal testing and maintenance operation only.

If a facility is permitting multiple Emergency Generators on this General Permit, then the column labeled "Total Capacity of All Equipment" shall be the sum total of the maximum rated heat input from the Emergency Generators combined.

The annual emission rates for each air contaminant are determined from the General Permit number, which is based on annual hours of normal testing and maintenance and the Total Capacity of All Equipment in millions of BTU per hour.

Only one General Permit Number can be selected from the Options table.

OPTIONS TABLE

POTENTIAL(S) TO EMIT (IN TPY) ARE ESTABLISHED BY SELECTING ANNUAL OPERATING HOURS (HOURS/YR) IN SELECTED CATEGORY DURING NORMAL TESTING AND MAINTENANCE OPERATION ONLY AND TOTAL CAPACITY OF ALL EQUIPMENT (MMBTU/HR)

General Permit Number	Annual Operating Hours for Normal Testing and Maintenance for each piece of equipment	Total Capacity of All Equipment (MMBTU/hr)		Air Contaminant Category (Tons/year)				
		Greater Than	Less Than	TSP	SO _x	NO _x	CO	VOC
EG-A1	30	1	10	0.05	0.03	0.66	0.14	0.05
EG-A2	60	1	10	0.09	0.06	1.32	0.29	0.11
EG-A3	100	1	10	0.16	0.10	2.21	0.48	0.18
EG-A4	30	10	24	0.04	0.07	1.47	0.42	0.29
EG-A5	60	10	24	0.07	0.15	2.94	0.84	0.58
EG-A6	100	10	24	0.12	0.24	4.90	1.39	0.96
EG-A7	30	24	40	0.06	0.12	2.45	0.70	0.48
EG-A8	60	24	40	0.12	0.24	4.90	1.39	0.96
EG-A9	30	40	60	0.09	0.18	3.67	1.04	0.72
EG-A10	30	60	80	0.12	0.24	4.90	1.39	0.96

NOTE: Annual emissions listed in the Options Table above were calculated using factors from AP-42, Fifth Edition, Volume 1, Chapter 3.

VII. COMPLIANCE PLAN

The Emergency Generator(s) covered by this General Permit is subject to the applicable requirements listed on the following pages.

COMPLIANCE PLAN: Emergency Generator

Item No	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
1.	<p>During operation of the Emergency Generator the Permittee shall not cause, suffer, allow or permit smoke the shade or appearance of which is darker than number 1 on the Ringelmann smoke chart or greater than 20 percent opacity, exclusive of visible condensed water vapor, to be emitted into the outdoor air from the combustion of fuel in any Emergency Generator for a period of more than 10 consecutive seconds. {N.J.A.C. 7:27-3.5}</p>	<p>Monitored by a visual determination annually based on ten consecutive seconds rolling average. {N.J.A.C. 7:27-8.13(d)1}</p>	<p>Recordkeeping by manual logging of parameter or storing in computer data system annually. All records created in a calendar year shall be maintained on site for five additional calendar years, and made available to the Department for review, upon request. {N.J.A.C. 7:27-8.13}</p>	<p>Notify by phone: Upon occurrence of visible emissions, over the allowable amount, the Permittee shall notify the Department immediately of the event. Such notification shall be made by calling the Environmental Action Hotline at (877) 927-6337. {N.J.A.C. 7:27-8.13(d)4}</p>
2.	<p>Allowable emission rate for particulates from the combustion of fuel shall be based on heat input rate to the generator. {N.J.A.C 7:27-4.2}</p>	None	None	None

3.	<p>This equipment shall not cause any air contaminant, including an air contaminant detectable by the sense of smell, to be present in the outdoor atmosphere in such quantity and duration which is, or tends to be, injurious to human health or welfare, animal or plant life or property, or would unreasonably interfere with the enjoyment of life or property, except in areas over which the owner or operator has exclusive use or occupancy. {N.J.A.C 7:27-5}</p>	None	<p>Permittee shall record in either a permanent bound log book or in readily accessible computer memories instances (date and time) when the operation of equipment has the potential to cause off-property effects. All records must be maintained on site for a minimum of 5 years. {N.J.A.C 7:27-8.13(d)3}</p>	<p>Any operation of the equipment which may cause a release of air contaminants in a quantity or concentration which poses a potential threat to public health, welfare, or the environment or which might reasonably result in citizen complaints shall be reported by the Permittee as required by the Air Pollution Control Act. Such notification shall be made by calling the Environmental Action Hotline at (877) 927-6337. {N.J.S.A 26:2C-19(e)}</p>
4.	<p>Compliance with the annual emission limit for each air contaminant (NO_x, VOC, CO, SO₂, TSP/PM-10) shall be based on hours of operation per year used for testing and maintenance as selected by the Permittee in the Options Table on the General Permit registration form. {N.J.A.C 7:27-8.13(a)}</p>	See Reference #6.	See Reference #6.	<p>Permittee shall report any non-compliance within three working days after the event in writing to the Regional Enforcement Office. {N.J.A.C 7:27-8.13(d)4}</p>

5.	The equipment shall not combust liquid fuel oil, which has a sulfur content exceeding 0.2 % sulfur by weight. {N.J.A.C 7:27-9}	For each liquid fuel oil delivery received, the Permittee shall review written documentation of the delivery to ensure the maximum allowable fuel oil sulfur content is not being exceeded. Such written documentation can include, but is not limited to: A Bill of Lading, Delivery Invoice, Certificate of Analysis. {N.J.A.C 7:27-8.13(a)}	Recordkeeping by bills of lading, delivery invoice or certificate of analysis per delivery. The permittee shall keep records of fuel oil sulfur content for each delivery received. All records must be maintained for a minimum of 5 years. {N.J.A.C 7:27-8.13(d)3}	None.
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<p>6.</p>	<p>The equipment specified in the permit shall be operated only under the following situations:</p> <ul style="list-style-type: none"> (a) During the performance of normal testing and maintenance procedures, as recommended in writing by the manufacturer and/or as required in writing by a Federal or State law or regulation. (b) When there is a power outage or the facility's primary source of mechanical or thermal energy fails because of an emergency; or (c) When there is a voltage reduction issued by PJM Interconnection, LLC (PJM) and posted on the PJM internet website (www.pjm.com) under the "Emergency Procedures" menu. <p>{N.J.A.C.7:27-19.1}</p>	<p>Permittee shall install and operate a totalizing, non-resettable hour meter monitoring the total hours of operation per year for the generator, continuously.</p> <p>{N.J.A.C 7:27-8.13(d)}</p>	<p>The owner or operator of an Emergency Generator shall record in a logbook or computer data system, the following information for each Emergency Generator:</p> <ul style="list-style-type: none"> (a) Total operating time from the Emergency Generator's hour meter, once per month; (b) If a voltage reduction is the reason for use of the Emergency Generator, a copy of the voltage reduction notification from PJM or other documentation of the voltage reduction, upon occurrence of event; and (c) If testing or maintenance is the reason for the operation of the Emergency Generator, the Permittee shall record the following upon occurrence of event: <ul style="list-style-type: none"> 1. The reason for its operation. 2. The date(s) of operation and the start-up & shutdown time; 3. The total operating time for testing or maintenance based 	<p>None.</p>
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			<p>on the Emergency Generator's hour meter; and</p> <ol style="list-style-type: none">4. The name of the operator.5. The monthly hours of operation during emergency periods shall be maintained. <p>The owner or operator of an Emergency Generator shall maintain the records on site for a period of no less than five years after the record was made and shall make the records readily available to the Department or the EPA, upon request.</p> <p>{N.J.A.C.7:27-19.11}</p>	
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<p>7.</p>	<p>Emergency Generators shall not be used:</p> <p>1) In a circumstance other than an emergency; for normal testing and maintenance on days when the Department forecasts air quality anywhere in New Jersey to be “unhealthy for sensitive groups,” “unhealthy,” or “very unhealthy” or hazardous” unless required in writing by a Federal or State law or regulation. Procedures for determining the air quality forecasts for New Jersey are available at the Department air quality web site at http://www.state.nj.us/dep/aqpp/aqforecast ; and</p> <p>2) as a source of energy or power after the primary energy or power source has become operable again. If the primary energy or power source is under the control of the owner or operator of the Emergency Generator, the owner or operator shall make a reasonable, timely effort to repair the primary energy or power source. {N.J.A.C.7:27-19.2(d)}</p>	<p>The Permittee shall check the air quality forecast for New Jersey available at the Department air quality website at http://www.state.nj.us/dep/aqpp/aqforecast prior to operating during testing and maintenance periods. {N.J.A.C. 7:27-8.13(d)2}</p>	<p>None.</p>	<p>Permittee shall report any non-compliance within three working days after the event in writing to the Regional Enforcement Office. {N.J.A.C 7:27-8.13(d)4. }</p>
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<p>8.</p>	<p>The Emergency Generators manufactured after April 1, 2006 (if a fire pump – after July 1, 2006) or modified or reconstructed after July 11, 2005 shall use liquid fuel , beginning October 1, 2007 that contains the following per gallon standards:</p> <ul style="list-style-type: none"> i. 500 ppm (0.05%) maximum sulfur content, and ii. A minimum cetane index of 40; or iii. A maximum aromatic content of 35 volume percent. <p>40 CFR 60.4207 (a)</p>	<p>For each fuel oil delivery received, the Permittee shall review written documentation of the delivery to ensure the maximum allowable fuel oil sulfur content is not being exceeded. Such written documentation can include, but is not limited to:</p> <p>A Bill of Lading, Delivery Invoice, or Certificate of Analysis.</p> <p>{N.J.A.C 7:27-8.13(d)}</p>	<p>Recordkeeping by bills of lading, delivery invoices or certificate of analysis per delivery. The permittee shall keep records of fuel oil sulfur content for each delivery received. All records must be maintained for a minimum of 5 years.</p> <p>{N.J.A.C 7:27-8.13(d)3}</p>	<p>None.</p>
<p>9.</p>	<p>The Emergency Generators manufactured after April 1, 2006 (if a fire pump – after July 1, 2006) or modified or reconstructed after July 11, 2005 shall use liquid fuel , beginning October 1, 2010 that contains the following per gallon standards:</p> <ul style="list-style-type: none"> i. 15 ppm (0.0015%) maximum sulfur content, and ii. A minimum cetane index of 40; or iii. A maximum aromatic content of 35 volume percent. <p>40 CFR 60.4207 (b).</p>	<p>For each fuel oil delivery received, the Permittee shall review written documentation of the delivery to ensure the maximum allowable fuel oil sulfur content is not being exceeded. Such written documentation can include, but is not limited to:</p> <p>A Bill of Lading, Delivery Invoice, or Certificate of Analysis.</p> <p>{N.J.A.C 7:27-8.13(d)}</p>	<p>Recordkeeping by bills of lading, delivery invoices or certificate of analysis per delivery. The permittee shall keep records of fuel oil sulfur content for each delivery received. All records must be maintained for a minimum of 5 years.</p> <p>{N.J.A.C 7:27-8.13(d)3}</p>	<p>None.</p>

<p>10.</p>	<p>The owner or operator of an Emergency Generator(s) combusting liquid fuel in a 2007 model year and later engine (in case of a fire pump – during or after a model year that applies to the fire pump engine power rating in Table 3 of NSPS IIII) must use an engine certified to the emission standards in 60.4204(b) or 60.4205(b) or (c), as applicable, for the same model year and maximum engine power (or in case of a fire pumps, the NFPA nameplate power). The engine must be installed and configured according to the manufacturer’s recommendations. 40 CFR 60.4211 (c)</p>	<p>None</p>	<p>Keep documentation from the manufacturer that the engine is certified to meet the emission standards. 40 CFR 60.4214(a)2iii N..J.A.C. 7:27-8.13(d) 3</p>	<p>None</p>
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<p>11.</p>	<p>The owner and operator of an Emergency Generator(s) combusting liquid fuel which is:</p> <ul style="list-style-type: none"> ◆ Pre – 2007 model year, ordered after July 11, 2005, and manufactured after April 1, 2006, must comply with emissions standards in 40 CFR 60.4204(a) or 60.4205(a), or ◆ Fire pumps manufactured after July 1, 2006, and prior to the model years in Table 3 of NSPS IIII, must comply with the emission standards in 60.4205(c), or ◆ Existing engines that are a pre – 2007 model year and modified or reconstructed after July 11, 2005, shall demonstrate compliance with this requirement by one of the following: <ol style="list-style-type: none"> 1) Purchasing an engine certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable for the same model year and maximum power. The engine must be installed and configured according to the manufacturer’s specifications. 2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly. 	<p>None</p>	<ol style="list-style-type: none"> 1) Keep documentation from the manufacturer that the engine is certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable for the same model year and maximum engine power, to meet the emission standards. 2) Keep records of performance test results for each pollutant for a test conducted on a similar engine. 3) Keep records of engine manufacturer data indicating compliance with the standards. 40 CFR 60.4211(b) 	<p>None</p>
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	3) Keeping records of engine manufacturer data indicating compliance with the standards. 40 CFR 60.4211 (b)			
12.	The maximum annual operating hours for normal testing and maintenance shall not exceed the corresponding operating hours determined from the general permit number selected in the Options Table. {N.J.A.C 7:27-8.13(a)}	None	None	None