

State of New Jersey

**Department of Environmental Protection
Division of Air Quality**

**General Operating Permit (GOP-006)
Combined Heat and Power Stationary Spark Ignition
Reciprocating Engine(s) less than or equal to
65 MMBTU per hour**

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

- A single combined heat and power (CHP) stationary spark ignition reciprocating engine, with or without duct burner, which has a maximum heat input rate less than or equal to 65 million BTU per hour (MMBTU/hr) based on the higher heating value (HHV) of the fuel; or
- Multiple combined heat and power (CHP) stationary spark ignition reciprocating engines, with or without duct burners, which have a combined total maximum heat input rate less than or equal to 65 MMBTU/hr based on the HHV of the fuel.

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

Each facility may possess only one GOP-006 at any time. This General Operating Permit cannot be revised. A facility wishing to modify the equipment in this General Operating Permit must do so by requesting the change through the operating permit modification procedures in N.J.A.C. 7:27-22.

This General Operating Permit may only be used at facilities with an approved Title V Operating Permit, and shall comply with the General Procedures for General Operating Permits posted at the New Jersey Department of Environmental Protection (NJDEP) website: <http://www.state.nj.us/dep/aqpp>.

This General Operating Permit can only be used for a combined heat and power (CHP) spark ignition engine unit with a minimum total design Efficiency (E) greater than or equal to 65 percent.

This General Operating Permit is applicable to combined heat and power (CHP) spark ignition reciprocating engines, with or without duct burners, combusting only natural gas or propane.

I. DEFINITIONS

The terms used in this General Operating Permit shall have the meanings given to them in N.J.A.C. 7:27-et. seq. or as defined below:

"Combined heat and power spark ignition engine unit" means a unit in which excess or byproduct heat energy produced by spark ignition engine(s), with or without duct burner(s), can be used in direct process applications and indirectly to produce steam or other useful heat recovery.

"Department" means the New Jersey Department of Environmental Protection.

"Duct burner" means a piece of equipment used with a combustion turbine or stationary reciprocating engine to increase the steam generating capacity of heat recovery steam generators. A duct burner consists of pipes and small burners that are placed in the exhaust duct upstream of the heat recovery steam generator. The duct burner allows firing of fuel to supplement the exhaust heat energy of the turbine or engine. A duct burner is a type of indirect heat exchanger.

"Fuel transfer" means the period of time from initiation of the transfer process in the spark ignition engine between natural gas and propane to the completion of this process, not to exceed 30 minutes.

"Maximum heat input rate" means, for a given piece of fuel-burning equipment, its maximum steady state fuel firing rate, in BTU per hour of gross heat input based on the fuel's higher heating value, as determined by the design rating of the equipment manufacturer. Fuel limiting device such as an orifice plate restriction, control valve limiting mechanism, or any device can not be used to lower the maximum design heat input rating.

"NSPS JJJJ" means Standards of Performance for New Sources as promulgated under 40 CFR 60, commonly referred to as New Source Performance Standards, applicable to a stationary spark ignition internal combustion engine.

"Shutdown of stationary spark ignition reciprocating engine" means the period of time from initial lowering of spark ignition reciprocating engine output to below 50 percent of full load to the cessation of spark ignition reciprocating engine operation not to exceed 30 minutes.

"Start-up of stationary spark ignition reciprocating engine" means the period of time from initiation of spark ignition engine operation until it reaches a steady state of 50 percent full load conditions, not to exceed 60 minutes.

II. AUTHORITY AND STATEMENT OF BASIS

A. Applicability

This General Operating Permit is issued under the authority granted to Division of Air Quality pursuant to N.J.S.A. 26:2C-9.2. This General Operating Permit shall allow for inspections and evaluations to assure conformance with all applicable provisions of N.J.A.C. 7:27 et seq., NSPS Subpart A and NSPS Subpart JJJJ.

This GOP consists of Sections I through VI and the completed registration form. Each section of this GOP and completed registration form are enforceable.

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

- A single combined heat and power (CHP) stationary spark ignition reciprocating engine, with or without duct burner, which has a maximum heat input rate less than or equal to 65 million BTU per hour (MMBTU/hr) based on the higher heating value (HHV) of the fuel; or
- Multiple combined heat and power (CHP) stationary spark ignition reciprocating engines, with or without duct burners, which have a combined total maximum heat input rate less than or equal to 65 MMBTU/hr based on the HHV of the fuel.

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

Each facility may possess only one GOP-006 at any time. This General Operating Permit cannot be revised. A facility wishing to modify the equipment in this General Operating Permit must do so by requesting the change through the operating permit modification procedures in N.J.A.C. 7:27-22.

This General Operating Permit may only be used at facilities with an approved Title V Operating Permit, and shall comply with the General Procedures for General Operating Permits posted at the New Jersey Department of Environmental Protection (NJDEP) website: <http://www.state.nj.us/dep/aqpp>.

This General Operating Permit can only be used for a combined heat and power (CHP) spark ignition engine unit with a total design Efficiency (E) greater than or equal to 65 percent.

The total efficiency of the combined heat and power units shall be calculated using equations [eq1], [eq2], and [eq3].

$$E = P / (\text{Fuel Input} / 3.413 \times 10^6 \text{ Btu/MW-hr}) \text{-----[eq1]}$$

$$P = (P_e)t + P_s + P_o \text{----- [eq2]}$$

Where:

P = gross energy output of the reciprocating engine system in MW

Fuel Input = amount of fuel used by the engine and the duct burner in Btu/hr (HHV)

(Pe)t = electrical energy output of the reciprocating engine in MW

Ps = is the useful thermal energy of the steam measured relative to ISO conditions, not used to generate additional electric or mechanical output, in MW, calculated as follows:

$$Ps = Q \times H / (3.413 \times 10^6 \text{ Btu/MW-hr}) \text{ ----- [eq3]}$$

Po = is the useful heat recovery, measured relative to ISO conditions, not used for steam generation.

Where:

Q = measured steam flow rate in lb/hr

H = enthalpy of the steam at measured temperature and pressure relative to ISO conditions in Btu/lb, and,

3.413×10^6 = conversion from Btu/hr to MW

This General Operating Permit is applicable to single or multiple combined heat and power (CHP) spark ignition engine units, with or without duct burners, combusting only natural gas and propane.

The conditions of approval for this permit are based on applicable requirements in State and Federal air pollution control rules. Each condition in the permit includes the citation of the applicable requirement on which the condition is based.

B. Monitoring, Recordkeeping and Reporting

This General Operating Permit includes monitoring requirements using stack emissions testing, as well as recordkeeping and reporting requirements that are sufficient to demonstrate the facility's compliance with the applicable State and Federal requirements consistent with the following:

1. Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements.

2. This General Operating Permit requires initial and renewal stack testing for compliance with NO_x, CO, VOC, and formaldehyde State of the Art limits. Compliance with NO_x, CO, and VOC limits during the permit term will be demonstrated through annual stack emission testing. The provisions of NSPS JJJJ also require stack testing after every 8760 hours of operation or three years, whichever comes first. These and other monitoring, recordkeeping and reporting requirements are in Compliance Plan at Section VI.

Eligibility for this General Operating Permit is based on the maximum heat input rate for the reciprocating engine and duct burner combined, if equipped, and the amount of each fuel used. Permittees are required to monitor the amount of each fuel combusted and maintain documentation of the maximum heat input rate of the duct burner and spark ignition reciprocating engine. The reciprocating engine and the duct burner's potential to emit and the amount of fuel combusted are based on the General Operating Permit Number selected under Annual Gaseous Fuel Limits Table in Section V.

The provisions in the General Procedures for General Operating Permits, located at www.state.nj.us/dep/aqpp, apply to the equipment covered by this General Operating Permit.

III. LIMITATIONS AND REQUIREMENTS

1. The conditions of a General Operating Permit cannot be changed. If a change to a source operation with a General Operating Permit is needed, then the Permittee must request the change through the Title V Operating Permit modification procedures in N.J.A.C. 7:27-22.
2. A facility with an expired Title V Operating Permit without an Application Shield pursuant to N.J.A.C. 7:27-22.7 may not register for the use of a General Operating Permit.
3. General Operating Permits may only be used for equipment not currently listed in an approved Title V Operating Permit. Facilities that will be getting a Title V Operating Permit in the future, or those that are in the process of getting a Title V Operating Permit, may use General Permits from N.J.A.C. 7:27-8 (Subchapter 8) until they obtain an approved Title V Operating Permit.
4. General Operating Permits may not be used where annual emissions of any air contaminant from the General Operating Permit would increase emissions from the facility by such amounts that would make the facility subject to the requirements of N.J.A.C. 7:27-18 (Emission Offset Rule), 40 CFR 51 Appendix S (Emission Offset Interpretative Ruling), 40 CFR 52.21 (PSD) or make the facility a major source for HAPs as defined in 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories).
5. Any facility with an approved Title V Operating Permit that obtains General Operating Permit(s) must determine based on its own evaluation that none of the General Operating

Permit(s) obtained would cause the facility to be subject to N.J.A.C. 7:27-18 (Emission Offset Rule), 40 CFR 51 Appendix S (Emission Offset Interpretative Ruling), 40 CFR 52.21 (PSD) or make the facility a major source for HAPs as defined in 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories). The basis for this determination must be kept on site and submitted with the next Title V Operating Permit modification application that increases actual emissions or Renewal Application, whichever occurs first. If found that the General Operating Permit has caused the facility to be subject to the above regulations, the authorization contained in the General Operating Permit is null and void and installation of equipment under this General Operating Permit will subject the facility to appropriate enforcement action.

6. The general requirements in the facility's Title V Operating Permit, such as those in the General Provisions and Authorities Section and Subject Item FC of the Compliance Plan, also apply to the source operation covered by this General Operating Permit. This includes, but is not limited to, the six month deviation report and annual compliance certification.
7. The expiration date of the General Operating Permit will be the expiration date of the facility's approved Title V Operating Permit. If the Title V Operating Permit has expired and has an application shield pursuant to N.J.A.C. 7:27-22.7, the conditions of the General Operating Permit remain enforceable until the Title V Operating Permit is renewed.
8. The General Operating Permit will be incorporated in the facility's Title V Operating Permit the first time the Title V Operating Permit is opened for a modification that proposes an increase in actual emissions, or at renewal, whichever occurs first. The General Operating Permit will be merged into the Title V Operating Permit at that time.

In addition to the General Operating Permit Limitations and Requirements specified in the General Procedures for General Operating Permits, this General Operating Permit can not be used to register the following equipment:

1. Spark ignition internal combustion engines that exclusively produce electricity or are designed without recovery of byproduct heat energy that is used in direct process applications and indirectly produce steam or hot water.
2. Spark ignition internal combustion engines with duct burners or spark ignition internal combustion engines without the duct burner with a maximum gross heat input rate greater than 65 MMBTU per hour.
3. Spark ignition engines or duct burners that combust fuels other than natural gas or propane. Fuels that are not allowed to be combusted include but are not limited to commercial fuels including diesel, No. 2, No. 4, No. 5 or No. 6 fuel oil, and non commercial fuels including 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.

4. Direct fired external combustion process including, but not limited to, space heaters or process heaters associated with a manufacturing process.
5. Incinerators, furnaces, kettles, crucibles, stills, roasters, re-boilers, kilns, combustion turbines, space heaters or process heaters and other combustion equipment that does not meet the Applicability criteria in Section II.
6. Duct burner operating independently from the spark ignition engine.

IV. EQUIPMENT/CONTROL SPECIFICATIONS

The permittee shall retain on site the following specifications for each Combined Heat and Power (CHP) spark ignition reciprocating engine unit and continuous process monitors:

1. The maximum rated heat input of each Combined Heat and Power (CHP) spark ignition reciprocating engine unit measured in millions BTU/hr (HHV), per written manufacturer's specifications or the manufacturer's nameplate on the equipment.
2. Each CHP engine must be designed to meet the emission levels summarized in Table 1 below.

Table 1

Pollutant	Emission Levels
Nitrogen Oxides (NO_x)	0.15 grams/BHP-hr
Carbon Monoxide (CO)	0.50 grams/BHP-hr
Volatile Organic Compounds (VOC)	0.15 grams/BHP-hr

3. The stack of each CHP unit must have a height of at least 35 feet if the maximum rated heat input of all CHP units is less than or equal to 20 MMBTU/hr.

The stack of each CHP unit must have a height of at least 50 feet if maximum rated heat input of all CHP units is greater than 20 MMBTU/hr and less than or equal to 65 MMBTU/hr. Restrictions to the stack height and maximum heat input rate ensure the health risk associated with any HAPS emissions will remain negligible.

4. Fuel flow rate and cumulative fuel use monitors are required.

V. POTENTIAL TO EMIT (PTE) OPTIONS

1. There are five choices of General Operating Permit Numbers under Annual fuel limits in Table 2 for Options listed below. Each General Operating Permit Number has associated

potential to emit (PTE) limits for criteria pollutants, in tons per year (tpy) with corresponding gaseous fuel usage in million cubic feet per year (MMCF/yr).

The annual PTE is based on the maximum allowable gaseous fuel limit based on a 12 consecutive month period (rolling one-month basis). Fuel totalizers and fuel flow monitors are required.

When registering for this General Operating Permit, only one General Operating Permit Number can be selected from one of the five General Operating Permit Numbers listed at the Annual Gaseous Fuel Limits table 2. Selection of a General Operating Permit Number establishes a permit potential to emit for the contaminants associated with that number.

2. The PTE limits for short term emissions of criteria pollutants in pound per hour (lb/hr) for gaseous fuel shall be calculated in the registration form, by entering the maximum heat input rate (HHV) of the combined heat and power equipment. The maximum heat input rate should be the same as entered in Section D of the registration form.

The permittee should enter the maximum heat input rate (HHV) of the engine unit into the registration form to get the pound per hour values of criteria pollutants and submit to the Department the completed registration form when registering for this General Operating Permit.

TABLE 2 OPTIONS									
ANNUAL GASEOUS FUEL LIMITS									
POTENTIAL TO EMIT (IN TONS PER YEAR) ARE ESTABLISHED BY SELECTING THE TOTAL FUEL LIMIT FOR ALL COMBINED HEAT AND POWER SPARK IGNITION RECIPROCATING ENGINES AND DUCT BURNERS COMBUSTING ANY OF THE FOLLOWING FUELS: NATURAL GAS OR PROPANE.									
General Operating Permit Number	Fuel Limit for all Equipment Combined		Units	Air Contaminant Category POTENTIAL TO EMIT (tons per year)					
	Annual (MMscf / year)	Maximum Heat Input Rate MMBTU/hr		Total Suspended Particulates (TSP)	Particulate Matter (PM-10)	Sulfur Dioxide (SO₂)	Carbon Monoxide (CO)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NO_x)
CHP- 006– 1	42.9	20	TPY	0.22	0.84	*	3.45	1.03	1.03
CHP- 006– 2	85.9	20	TPY	0.43	1.68	*	6.90	2.07	2.07
CHP- 006 – 3	172	20	TPY	0.87	3.36	*	13.8	4.13	4.13
CHP- 006– 4	258	65	TPY	1.30	5.05	*	20.7	6.20	6.20
CHP- 006– 5	415	65	TPY	2.10	8.13	*	33.3	10.0	10.0

* - less than reporting thresholds.

“Output Based Regulators Handbook” calculations methods used to estimate emission rates at 65% total efficiency

In order to determine compliance with the total gaseous fuel limit, any Permittee that combusts propane must convert gallons propane, using the following formula: annual volume of propane burned (in gallons) multiplied by the factor 37.0 = equivalent volume of propane (in standard cubic feet.)

NOTE:

For SO₂ the PTE annual emissions listed were calculated using emission factors from AP-42, Fifth Edition, Volume 1, Chapter 3, Tables 3.2-2. NO_x, CO and VOC, are based on the State of the Art Manual for Reciprocating Internal Combustion Engines, May 2003, grams/BHP-hr values of NO_x at 0.15 grams/BHP-hr, CO at 0.50 grams/BHP-hr, and VOC at 0.15 grams/BHP-hr.

VI. COMPLIANCE PLAN

The equipment covered by this General Operating Permit is subject to the applicable requirements listed on the following pages.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
1	In addition to this Compliance Plan, all conditions contained in the document "General Procedures for General Operating Permits", posted at http://www.nj.gov/dep/aqpp , shall also be subject to enforcement. [N.J.A.C. 7:27-22.16(a)]	None	None	None
2	The permittee shall ensure combustion equipment included in this General Operating Permit is easily identifiable by clear and conspicuous labeling, including manufacturer name, model number, serial number, and maximum rated heat input. [N.J.A.C. 7:27-22.16(a)]	None	None	None
3	The spark ignition reciprocating engine(s) with the duct burner or the reciprocating engine(s) without the duct burner, included in this General Operating Permit (GOP-006) shall have a total maximum heat input rate of less than or equal to 65 million BTU per hour, based on Higher Heating Value (HHV). The owner or operator shall not operate the RICE unit greater than the maximum rated heat input listed in Section C of the registration form, page 2. [N.J.A.C. 7:27-22.16(a)]	Other: Monitored by manufacturer's specifications showing the maximum heat input rate for the reciprocating engine and duct burner. [N.J.A.C. 7:27-22.16(o)]	Other: Maintain the manufacturer's specifications showing the maximum heat input rate for the reciprocating engine and duct burner on site for the life of the equipment. The permittee shall keep the completed registration form for the duration of the General Operating Permit and make it available to the Department upon request. [N.J.A.C. 7:27-22.16(o)].	None.
4	The permittee shall conduct a comprehensive stack test to demonstrate compliance with the CO, NO _x , VOC and formaldehyde emission limits, in accordance with State and NSPS requirements. For reciprocating engines with supplemental duct burner, the duct burner shall be in operation during the performance test. Testing must be conducted at worst-case permitted operating conditions with regard to meeting the applicable emission standards, but without creating an unsafe condition. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emission testing once initially and upon renewal and shall be based on the average of three Department validated stack test runs. Unless otherwise approved in the stack test protocol or by the Department, each test run shall be 60 minutes in sampling duration. Stack test shall be conducted for CO, NO _x , VOC and formaldehyde emissions. Subsequent compliance with NO _x , CO and VOC emission limits shall be demonstrated by annual stack	Recordkeeping by stack test results. The stack test results shall be kept on site for five years and made available to the Department upon request [N.J.A.C. 7:27-22.16(o)]	The Permittee shall submit a stack test protocol to the Bureau of Technical Services (BTS) at PO Box 437, Trenton, NJ 08625 within 60 days from the date of the registering for this permit. Within 30 days of protocol approval, the Permittee must contact BTS at 609-530-4041 to schedule a mutually acceptable test date. The initial stack test must be conducted <u>within 180 days</u> from the date of the registration for this permit or not later than 180 days after the date of the initial operation of the RICE unit, whichever is later. Renewal Testing shall be conducted at least 18 months prior to the expiration of the

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
		testing. (see Ref. # 11 through 16) [N.J.A.C. 7:27-22.16(o)]		approved operating permit. The stack test report must be submitted to BTS within 45 days after performing the stack test pursuant to N.J.A.C. 7:27-22.19(d). A summary of the test results must be submitted to the appropriate Regional Enforcement Office at the address available at http://www.nj.gov/dep/enforcement/air.html The test results must be certified by a licensed professional engineer or certified industrial hygienist. A copy of the test results must be submitted with the operating permit renewal application due at least 12 months prior to expiration of the Operating Permit. Test results shall be <u>reported in units lbs/hr, grams/brake horsepower hour, lbs/MM Btu, ppmvd @ 15% O₂.</u> [N.J.A.C. 7:27-22.18(e)] and [N.J.A.C. 7:27-22.18(h)]
5	Opacity <= 20%, exclusive of visible condensed water vapor, except for a period of not longer than 10 consecutive seconds. See additional opacity requirement at reference # 6. [N.J.A.C.7:27-3.5]	None.	None.	None.
6	No Visible Emissions. Except for start-up and shutdown, equipment shall not be operated in a manner that will cause visible emissions, exclusive of visible condensed water vapor. [N.J.A.C. 7:27-22.16(a)]	None.	None.	None.
7	The maximum allowable particulate emission limit determined in Table at N.J.A.C. 7:27-4.2(a) shall be based on the rated heat input of the CHP system.	None	None	None

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	N.J.A.C. 7:27-4.2(a)].			
8	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]	None	None	Notify by phone: Upon occurrence of event. 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. The Permittee shall immediately notify the Department of any non-compliance by calling the Environmental Action Hotline at (877) 927-6337 . [N.J.S.A. 26:2C-19(e)]
9	NOx (Total) <= 0.90 grams/brake horsepower-hour. [N.J.A.C. 7:27-19.8(e)]	Monitored by stack emissions testing once initially. Any NOx testing conducted pursuant to N.J.A.C. 7:27-19.15(a)2 shall be conducted concurrently with CO testing. The applicable NOx emission limits in N.J.A.C. 7:27-19 will not be considered to have been met unless the concurrent CO testing demonstrates compliance with the CO limit in N.J.A.C. 7:27-16.9 or the permit limit for CO, whichever is more stringent, is also met. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)] and [N.J.A.C. 7:27-19.15(a)2].	Recordkeeping by stack test results once initially. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Submit protocol, conduct test and submit results once initially. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
10	<p>The Permittee shall conduct the adjustment of the combustion process according to manufacturer's recommended maintenance schedules for each engine or each engine and duct burner. The adjustment of the combustion process shall be done in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the specific procedures for combustion adjustment monitoring specified in NJDEP Technical Manual 1005. [N.J.A.C.7:27-19.16] and [N.J.A.C. 7:27-19.8].</p>	<p>Monitored by periodic emission monitoring upon performing combustion adjustment. Adjust the combustion process, according to manufacturer's recommended maintenance schedules.</p> <p>[N.J.A.C. 7:27-19.8(f)].</p>	<p>Recordkeeping by manual logging of parameter or storing data in a computer data system upon performing combustion adjustment. The Permittee of a combined heat and power stationary spark reciprocating engine shall retain records for a minimum of five years, to be made readily accessible to the Department upon request. Such record shall contain the following information for each adjustment:</p> <ol style="list-style-type: none"> 1. The date of the adjustment and the times at which it began and ended; 2. The name, title, and affiliation of the person who performed the procedure and adjustment; 3. The type of procedure and maintenance performed; 4. The concentrations of NOx, CO and O2, measured before and after the adjustment was made; and 5. The type and amount of fuel use over the 12 months prior to the adjustment. <p>[N.J.A.C. 7:27-19.16(h)].</p>	<p>None.</p>
11	<p>NOx (Total) <= 0.15 grams/brake horsepower-hour based on engine output only, based on Table 1, Section IV Equipment/Control Specifications of this General Operating Permit.. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by stack emissions testing annually. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].</p>	<p>Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].</p>	<p>Stack test – Submit protocol, conduct test and submit results. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4.</p>

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
				[N.J.A.C. 7:27-22.16(o)].
12	NOx (Total) <= 25 ppmvd @ 15% O2. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emissions testing annually. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Stack test – Submit protocol, conduct test and submit results. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].
13	CO <= 0.50 grams/brake horsepower-hour based on engine output only, based on Table 1, Section IV Equipment/Control Specifications of this General Operating Permit.. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emissions testing annually. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Stack test – Submit protocol, conduct test and submit results. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].
14	CO <= 140 ppmvd @ 15% O2. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emissions testing annually. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Stack test – Submit protocol, conduct test and submit results. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].
15	VOC (Total) <= 0.15 grams/brake horsepower-hour based on engine output only, based on Table 1, Section IV Equipment/Control Specifications of this General Operating Permit.. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emissions testing annually. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Stack test – Submit protocol, conduct test and submit results. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
16	VOC (Total) <= 15 ppmvd @ 15% O2 [N.J.A.C. 7:27-22.16(a)]	Stack emission testing annually, based on the average of three Department validated stack test runs. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Submit protocol, conduct test and submit results once initially. Alternatively, the Permittee may request BTS to use the approved protocol. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].
17	Formaldehyde <= 0.055 lb/MMBTU. [N.J.A.C. 7:27-22.16(a)]	Monitored by stack emissions testing. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by stack test results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].	Stack test – Submit protocol, conduct test and submit results. See stack test requirements in this permit at Reference #4. [N.J.A.C. 7:27-22.16(o)].
18	Compliance with self imposed annual emission limits selected by the Permittee in the Options Table of the General Operating Permit Registration Form for the following air contaminants (NOx, VOC, CO, SO2, TSP and PM-10) shall be based on the natural gas and Propane consumption. The Permittee shall comply with the hourly emission limits established during the registration process. The hourly limits are based on the maximum heat input rate (HHV) of the RICE unit. [N.J.A.C. 7:27.22.16(a)]	Monitored by fuel flow/firing rate instrument continuously. Permittee shall install and operate an in line flow meter monitoring the total amount of fuel burned each 12 consecutive month period (rolling 1-month basis). [N.J.A.C. 7:27-22.16(o)].	Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. All records of the actual fuel consumption shall be kept on-site for at least five (5) years, and made readily accessible to the Department upon request. The permittee shall keep the completed registration form, showing hourly emission limits calculated as prescribed on the registration form, for the duration of the General Operating Permit and make it available to the Department upon request. [N.J.A.C. 7:27-22.16(o)]	None.
19	Ammonia <= 10 ppmvd @ 15% O2. Applicable if equipped with a Selective Catalytic Reduction (SCR) control device to meet the NOx emission limits in this General Operating Permit. [N.J.A.C. 7:27.22.16(a)]	Monitored by complying with the manufacturer's recommended maintenance procedures. [N.J.A.C. 7:27-22.16(o)].	Keep the manufacturer's design specification and recommended maintenance procedure on site for the life of the equipment. [N.J.A.C. 7:27-22.16(o)].	None.
20	If equipped with a Selective Catalytic Reduction (SCR) control device to meet NOx emission limits in this General Operating Permit, the control device(s) must operate at all times during engine operation. Reagent shall be injected at all	Monitored by complying with the manufacturer's recommended maintenance procedures to ensure compliance. [N.J.A.C. 7:27-22.16(o)].	Keep the manufacturer's design specification and recommended maintenance procedure on site for the life of the equipment. [N.J.A.C. 7:27-22.16(o)].	None.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	<p>times during engine operation as per the manufacturer's specifications.</p> <p>[N.J.A.C. 7:27.22.16(a)]</p>			
21	<p>This General Operating Permit (GOP 006) can only be used for combined heat and power (CHP) spark ignition reciprocating engine unit with a total design efficiency $\geq 65\%$. [N.J.A.C. 7:27-22.16(a)]</p>	<p>Monitored by calculations prior to startup and upon request of the Department. The formulae for calculating the total design efficiency are provided in Section IIA of this General Operating Permit [N.J.A.C. 7:27-22.16(o)].</p>	<p>Recordkeeping by keeping the manufacturer's design specification and copy of calculations on site for the life of the system. [N.J.A.C. 7:27-22.16(o)].</p>	None.
22	<p>The stack of each CHP system must have a height of at least 35 feet above ground if the maximum rated heat input of all CHP units is equal to or less than 20 million BTU/hour.</p> <p>The stack of each CHP system must have a height of at least 50 feet if the maximum rated heat input of all CHP units is greater than 20 million BTU/hour and equal to or less than 65 million BTU/hour.</p> <p>[N.J.A.C. 7:27-22.16(a)].</p>	<p>Once initially, the permittee shall measure the stack heights for each CHP system.</p> <p>[N.J.A.C. 7:27-22.16(o)].</p>	<p>Other: keep the records of measurement on site.</p> <p>[N.J.A.C. 7:27-22.1(o)].</p>	None.
23	<p>The owner or operator of a new non-certified SI ICE with a maximum engine power of $100 \leq \text{HP} < 500$ ($75 \leq \text{kW} < 375$) burning natural gas or lean burn Liquefied Petroleum Gas (LPG), manufactured after July 1, 2008 and prior to January 1, 2011, must meet the emission standards for engines $100 \leq \text{HP} < 500$ summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: $\text{NO}_x \leq$</p>	<p>Monitored by stack emission testing once initially, based on the average of three 1-hour tests. Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup,</p>	<p>Recordkeeping by stack test results once initially. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)(4)]</p>	<p>Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of a stack test to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]</p>

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	2.0 g/HP-hr (2.7 g/kW-hr), CO <= 4.0 g/HP-hr (5.4 g/kW-hr), VOC <= 1.0 g/HP-hr (1.3 g/kW-hr) or NOx <= 160 ppmvd @15% O2, CO <= 540 ppmvd @15% O2, VOC <= 86 ppmvd @15% O2. [40 CFR 60.4233(e)]	shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)(i)]		
24	The owner or operator of a new non-certified SI ICE with a maximum engine power of 100 <= HP < 500 (75 <= kW < 375) burning natural gas or lean burn Liquefied Petroleum Gas (LPG), manufactured after January 1, 2011 must meet the emission standards for engines 100 <= HP < 500 summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: NOx <= 1.0 g/HP-hr (1.3 g/kW-hr), CO <= 2.0 g/HP-hr (2.7 g/kW-hr), VOC <= 0.7 g/HP-hr (1 g/kW-hr) or NOx <= 82 ppmvd @15% O2, CO <= 270 ppmvd @15% O2, VOC <= 60 ppmvd @15% O2. [40 CFR 60.4233(e)]	Monitored by stack emission testing once initially, based on the average of three 1-hour tests. Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g).	Recordkeeping by stack test results once initially. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)(4)]	Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of a stack test to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]
25	The owner or operator of a new non-certified SI ICE lean burn natural gas or LPG with a maximum engine power of 500 <= HP < 1350 (375 <= kW < 1010) manufactured after January 1, 2008 and prior to July 1, 2010 must meet the emission standards for engines 500<= HP < 1350 summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: NOx <=2.0 g/HP-hr (2.7 g/kW-hr), CO <= 4.0 g/HP-hr (5.4 g/kW-hr), VOC <= 1.0 g/HP-hr (1.3 g/kW-hr) or NOx <= 160 ppmvd @15% O2, CO <= 540 ppmvd	Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the	Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]	Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	@15% O ₂ , VOC ≤ 86 ppmvd @15% O ₂ . [40 CFR 60.4233(e)]	requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]		
26	The owner or operator of a new non-certified SI ICE lean burn natural gas or LPG with a maximum engine power of 500 ≤ HP < 1350 (375 ≤ kW < 1010) manufactured after July 1, 2010 must meet the emission standards for engines 500 ≤ HP < 1350 summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: NO _x ≤ 1.0 g/HP-hr (1.3 g/kW-hr), CO ≤ 2.0 g/HP-hr (2.7 g/kW-hr), VOC ≤ 0.7 g/HP-hr (1 g/kW-hr) or NO _x ≤ 82 ppmvd @15% O ₂ , CO ≤ 270 ppmvd @15% O ₂ , VOC ≤ 60 ppmvd @15% O ₂ . [40 CFR 60.4233(e)]	Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be	Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]	Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
		<p>conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]</p>		
27	<p>The owner or operator of a new non-certified natural gas SI ICE (except lean burn) with a maximum engine power of $500 \leq \text{HP} < 1350$ ($375 \leq \text{kW} < 1010$) manufactured after July 1, 2007 and prior to July 1, 2010 must meet the emission standards for engines $\text{HP} \geq 500$ summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: $\text{NO}_x \leq 2.0$ g/HP-hr (2.7 g/kW-hr), $\text{CO} \leq 4.0$ g/HP-hr (5.4 g/kW-hr), $\text{VOC} \leq 1.0$ g/HP-hr (1.3 g/kW-hr) or $\text{NO}_x \leq 160$ ppmvd @15% O₂, $\text{CO} \leq 540$ ppmvd @15% O₂, $\text{VOC} \leq 86$ ppmvd @15% O₂. [40 CFR 60.4233(e)]</p>	<p>Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]</p>	<p>Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]</p>	<p>Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]</p>

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
28	<p>The owner or operator of a new non-certified natural gas SI ICE (except lean burn) with a maximum engine power of $500 < = HP < 1350$ ($375 < = kW < 1010$) manufactured after July 1, 2010 must meet the emission standards for engines $HP > = 500$ summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: $NOx < = 1.0$ g/HP-hr (1.3 g/kW-hr), $CO < = 2.0$ g/HP-hr (2.7 g/kW-hr), $VOC < = 0.7$ g/HP-hr (1 g/kW-hr). or $NOx < = 82$ ppmvd @15% O₂, $CO < = 270$ ppmvd @15% O₂, $VOC < = 60$ ppmvd @15% O₂. [40 CFR 60.4233(e)]</p>	<p>Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]</p>	<p>Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]</p>	<p>Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4. [40 CFR 60.4245(d)]</p>
29	<p>The owner or operator of a new non-certified SI ICE natural gas or lean burn LPG with a maximum engine power of $> = 1350$ HP ($> = 1010$ kW) manufactured after July 1, 2007 and prior to July 1, 2010 must meet the emission standards for engines $HP > = 500$ summarized in</p>	<p>Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760</p>	<p>Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]</p>	<p>Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4.. [40 CFR 60.4245(d)]</p>

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	Table 1 in 40 CFR 60 Subpart JJJJ as follows: NO _x ≤ 2.0 g/HP-hr (2.7 g/kW-hr), CO ≤ 4.0 g/HP-hr (5.4 g/kW-hr), VOC ≤ 1.0 g/HP-hr (1.3 g/kW-hr) or NO _x ≤ 160 ppmvd @ 15% O ₂ , CO ≤ 540 ppmvd @ 15% O ₂ , VOC ≤ 86 ppmvd @ 15% O ₂ . [40 CFR 60.4233(e)]	hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the requirements in 40 CFR 60.8 and 40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]		
30	The owner or operator of a new non-certified SI ICE natural gas or lean burn LPG with a maximum engine power of ≥ 1350 HP (≥ 1010 kW) manufactured after July 1, 2010 must meet the emission standards for engines HP ≥ 500 summarized in Table 1 in 40 CFR 60 Subpart JJJJ as follows: NO _x ≤ 1.0 g/HP-hr (1.3 g/kW-hr), CO ≤ 2.0 g/HP-hr (2.7 g/kW-hr), VOC ≤ 0.7 g/HP-hr (1 g/kW-hr) or NO _x ≤ 82 ppmvd @ 15% O ₂ , CO ≤ 270 ppmvd @ 15% O ₂ , VOC ≤ 60 ppmvd @ 15% O ₂ . [40 CFR 60.4233(e)]	Monitored by stack emission testing at the approved frequency, based on the average of three 1-hour tests. The permittee shall conduct an initial performance test and conduct subsequent performance testing every 8760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, per 40 CFR 60.4243(b)(2)(ii). Each performance test must be conducted according to the requirements in 40 CFR 60.8 and	Recordkeeping by stack test results at the approved frequency. The owner or operator of a SI ICE engine must keep documentation demonstrating compliance with the applicable emission standards. [40 CFR 60.4245(a)]	Submit a stack test report: Within 60 days of stack testing. The owner or operator of a SI ICE engine must submit the results of stack tests to EPA Region 2 and to the Regional Enforcement Office of NJDEP. See stack test requirements in this permit at Reference #4.. [40 CFR 60.4245(d)]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
		40 CFR 60.4244 and under the specific conditions specified in Table 2 to 40 CFR 60 Subpart JJJJ. The tests must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and may not be conducted during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). Three separate test runs for each performance test must be conducted, each test run must last at least 1 hour. Compliance with the emission limits shall be determined based on calculations in 40 CFR 60.4244(d) through (g). [40 CFR 60.4243(b)(2)]		
31	The owner or operator of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine. [40 CFR 60.4234]	Other: The owner or operator must demonstrate compliance as prescribed in 40 CFR 60 Subpart JJJJ. [40 CFR 60].	Other: The owner or operator must keep records of the documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4)].	None.
32	The owner or operator may not install stationary SI ICE that do not meet the applicable requirements in 40 CFR 60.4233 after the deadline established in 40 CFR 60.4236(a) and (b), except for engines that were removed from one existing location and reinstalled at a new location. [40 CFR 60.4236]	Other: The owner or operator must demonstrate compliance as prescribed in 40 CFR 60 Subpart JJJJ. [40 CFR 60].	Other: The owner or operator must keep records of the documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4)].	None.
33	The owner or operator of a non - certified SI ICE engine with maximum engine power <= 500 HP (<= 375 kW) must keep a maintenance plan and records of conducted maintenance, and must, to the extent practicable, maintain and operate the engine in a manner consistent with	Other: The owner or operator must demonstrate compliance as prescribed in 40 CFR 60.4243(b)(2) [40 CFR 60.4243].	Other: The owner or operator must keep records of the documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4)].	None.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	<p>good air pollution control practice for minimizing emissions, to demonstrate compliance, per 40 CFR 60.4243(b)(2)(i). Additionally, the owner or operator must perform an initial performance test to demonstrate compliance as indicated in 40 CFR 60.4243(b)(2)(i). The subsequent performance testing is not required unless the engine is rebuilt as that term is defined in 40 CFR 94.11(a) or undergoes major repair and maintenance, per 40 CFR 60.4243(f). [40 CFR 60.4243(b)(2)(i)]</p>			
34	<p>The owner or operator of a non - certified SI ICE engine with maximum engine power > 500 HP (> 375 kW) must keep a maintenance plan and records of conducted maintenance, and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. Additionally, the owner or operator must conduct an initial performance test and conduct subsequent performance testing in accordance with 40 CFR 60.4244 every 8760 hours or 3 years, whichever comes first, as prescribed in 40 CFR 60.4243(b)(2)(ii) to demonstrate compliance. [40 CFR 60.4243(b)(2)(ii)]</p>	<p>Other: The owner or operator must demonstrate compliance as prescribed in 40 CFR 60.4243(b)(2). [40 CFR 60.4243].</p>	<p>Other: The owner or operator must keep records of the documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4)].</p>	None.
35	<p>The owner or operator of a SI ICE natural gas engine may operate an engine using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owner</p>	None.	<p>Other: The owner or operator must keep records of the hours that propane was used. [40 CFR 60.4243(e)].</p>	None.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	or operator is required to conduct a performance test to demonstrate compliance with the emission standards in 40 CFR 60.4233. [40 CFR 60.4243(e)]			
36	The owner or operator shall maintain and operate the air-to-fuel ratio controllers appropriately to ensure proper operation of the engine and control device to minimize emissions at all times. [40 CFR 60.4243(g)]	None.	None.	None.
37	The owner or operators of all SI ICE must keep records of the information in 40 CFR 60.4245(a)(1) through (4) as follows: All notification submitted to comply with 40 CFR 60 Subpart JJJJ and all documentation supporting any notification; maintenance conducted on the engine; for a certified engine, keep documentation from the manufacturer that the engine is certified; if engine is not a certified engine or is a certified engine operating in a non-certified manner, documentation that the engine meets the emission standards. [40 CFR 60.4245(a)]	None.	Other: The owner or operators of all SI ICE must keep records of the information in 40 CFR 60.4245(a)(1) through (4) as follows: (1) All notification submitted to comply with 40 CFR 60 Subpart JJJJ and all documentation supporting any notification; (2) maintenance conducted on the engine; (3) for a certified engine, keep documentation from the manufacturer that the engine is certified; (4) if engine is not a certified engine or is a certified engine operating in a non-certified manner, documentation that the engine meets the emission standards. [40 CFR 60.4245(a)].	None.
38	The owner or operator of SI ICE engine with a maximum engine power \geq 500 HP (\geq 375 kW) that have not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231 must submit an initial notification as required in 40 CFR 60.7(a)(1). [40 CFR 60.4245(c)]	None.	None.	Submit notification: Once initially. The owner or operator must submit an initial notification as required in 40 CFR 60.7(a)(1) to EPA Region 2 and Regional Enforcement Office of NJDEP. The notification must include the information outlined in 40 CFR 60.4245(c)(1) through (5): (1) Name and address of the owner or operator; (2) The address of the affected source; (3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement; (4) Emission control equipment; and (5) Fuel used. [40 CFR 60.4245(c)]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
39	The owner or operator of SI ICE engine shall comply with the applicable General Provisions in 40 CFR 60 Subpart A as listed in Table 3 in 40 CFR 60 Subpart JJJJ. [40 CFR 60.4246]	None.	None.	None.
40	All requests, reports, applications, submittals, and other communications to the Administrator pursuant to Part 60 shall be submitted in duplicate to the Regional Office of US Environmental Protection Agency. Submit information to: Director, Division of Enforcement & Compliance Assistance, US EPA, Region 2, 290 Broadway, New York, NY 10007-1866. [40 CFR 60.4(a)]	None.	None.	Submit a report: As per the approved schedule to EPA Region 2 as required by 40 CFR 60. [40 CFR 60.4(a)]
41	Copies of all information submitted to EPA pursuant to 40 CFR Part 60, must also be submitted to the appropriate Regional Enforcement Office of NJDEP. [40 CFR 60.4(b)]	None.	None.	Submit a report: As per the approved schedule to the appropriate Regional Enforcement Office of NJDEP as required by 40 CFR 60. [40 CFR 60.4(b)]
42	The owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, of the date of construction or reconstruction of an affected facility as defined under 40 CFR Part 60 Subpart A. Notification shall be postmarked no later than 30 days after such date. [40 CFR 60.7(a)(1)]	None.	None.	Submit notification: Upon occurrence of event to EPA Region 2 and the appropriate Regional Enforcement Office of NJDEP as required by 40 CFR 60.7 [40 CFR 60.7(a)(1)]
43	The owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, of the actual date of initial startup of an affected facility postmarked within 15 days after	None.	None.	Submit notification: Upon occurrence of event to EPA Region 2 and the appropriate Regional Enforcement Office of NJDEP as required by 40 CFR 60.7 [40 CFR 60.7(a)(3)]

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	such date. [40 CFR 60.7(a)(3)]			
44	The owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, any malfunction of air pollution control equipment or any periods during which continuous monitoring system or monitoring device is inoperative. [40 CFR 60.7(b)]	None.	Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The records should be kept in a permanent form suitable for inspections. [40 CFR 60.7(b)]	None
45	Within 60 days after achieving the maximum production rate at which the affected facility will operate, but not later than 180 days after initial startup of the facility, the owner or operator shall conduct performance test(s) and shall furnish the Administrator a written report of the results. [40 CFR 60.8(a)]	None.	None.	Submit a report: At a common schedule agreed by the operator and the Administrator. The owner or operator shall submit results of the performance test(s) to the Administrator. [40 CFR 60.8(a)]
46	Performance tests shall be conducted under conditions the Administrator specifies to the plant operator based on representative performance of the affected facility. Operations during periods of startup, shutdown and malfunction shall not constitute representative conditions for the purpose of the performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)]	None.	None.	None.
47	The owner or operator shall provide the Administrator at least 30 days prior	None.	None.	None.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	notice of any performance test and shall provide adequate performance testing facilities as specified in 40 CFR Part 60.8(e). [40 CFR 60.8(d)]			
48	Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. [40 CFR 60.8(f)]	None.	None.	None.
49	Compliance with NSPS standards specified in this permit, other than opacity, shall be determined only by performance tests established by 40 CFR 60.8, unless otherwise specified in NSPS. [40 CFR 60.11(a)].	None.	None.	None.
50	At all times, including periods of start-up, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operation and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]	None.	None.	None.
51	No owner or operator subject to NSPS standards in Part 60, shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment	None.	None.	None.

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
	includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere. [40 CFR 60.12]			
52	A new or reconstructed stationary RICE located at an area source must meet the requirements of 40 CFR 63 by meeting the requirements 40 CFR 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under 40 CFR 63. [40 CFR 63.6590(c)]	None.	None.	None.