

NSPS for Stationary Spark Ignition Engines at Area Sources

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Overview

There are three regulations that apply to Reciprocating Internal Combustion Engines (RICE), depending on the type of engine and the date of construction: the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary RICE, New Source Performance Standards (NSPS) for Stationary Compression Ignition (CI) Engines, and NSPS for Stationary Spark Ignition (SI) Engines.

Some engines will be subject to both the NESHAP and one of the NSPS rules. Older engines will be subject only to the NESHAP. If an engine is a dual fuel engine, i.e. one that burns both natural gas and diesel, then, for the purposes of these rules, the engine is considered CI if 2% or more of the energy is obtained from burning diesel in the engine on an annual average. Refer to the NESHAP and CI NSPS factsheets for more information on these rules.

This factsheet explains what you must do to comply with the NSPS for Stationary SI (natural gas, landfill gas, gasoline, propane, etc.) RICE.

NSPS for Stationary Spark Ignition Engines (Subpart JJJ)—At a Glance

- Applies to new, modified and reconstructed SI engines.
- For the NSPS for SI engines, your RICE is a new source if:
 - ◆ it was ordered after June 12, 2006 and manufactured on or after:
 - ◇ July 1, 2007 if ≥ 500 hp (except lean burn $500 \leq \text{hp} < 1,350$);
 - ◇ January 1, 2008 if < 500 hp; or
 - ◇ January 1, 2009 (if emergency) > 25 hp; OR
 - ◆ if it was modified/reconstructed after June 12, 2006.
- Focus is on criteria pollutants (VOC, NO_x, PM, CO, SO₂).

Applicability

The NSPS applies to new and reconstructed SI engines. New engines at area sources of hazardous air pollutants can comply with the NESHAP by meeting the NSPS requirements. An **area source of HAPs** is any facility that has the potential to emit less than 10 tons of any single hazardous air pollutant and less than 25 tons of total hazardous air pollutants.

What Requirements Apply?—Emission Limitations

Both emissions limits and fuel standards may apply to new engines under this rule. Tables 1 and 2 describes the emission limitations that apply based on engine type, fuel, size (power), and/or model year.



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Table 1			
NSPS for Smaller SI Non-Emergency Engines 25<hp<100			
Maximum Engine Power	Manufacture Date	Emission Requirement in g/kW-hr* (g/hp-hr**)	
		HC+NO _x ***	CO****
25<hp<100	July 1, 2008	3.8 (2.8)	6.5 (4.8)
	July 1, 2008 (severe duty)	3.8 (2.8)	200.0 (149.2)

* g/kW-hr = grams per kilowatt-hour

** g/hp-hr = grams per horsepower-hour

*** HC+NO_x = hydrocarbons + nitrogen oxide

**** CO = carbon monoxide

Table 2								
NSPS for Larger SI Non-Emergency Engines ≥ 100 hp (except gasoline and rich burn LPG) and SI Landfill/Digester Gas Engines and Emergency SI engines > 25 hp								
Engine Type and Fuel	Maximum Engine Power	Manufacture Date	Emissions Standards					
			g/hp-hr			*ppmvd@ 15% O ₂		
			NO _x	CO	VOC	NO _x	CO	VOC
Non-emergency SI Natural Gas, and Non-emergency SI Lean Burn LPG	100≤hp<500	07/01/2008	2.0	4.0	1.0	160	540	86
		01/01/2011	1.0	2.0	0.7	82	270	60
Non-emergency SI Lean Burn, Natural Gas and LPG	500≤hp<1350	01/01/2008	2.0	4.0	1.0	160	540	86
		07/01/2010	1.0	2.0	0.7	82	270	60
Non-emergency	hp≥500	07/01/2007	2.0	4.0	1.0	160	540	86
SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤hp<1350)	hp≥500	07/01/2010	1.0	2.0	0.7	82	270	60
Landfill Digester Gas (except lean burn 500≤hp<1350)	hp<500	07/01/2008	3.0	5.0	1.0	220	610	80
		01/01/2010	2.0	5.0	1.0	150	610	80
	hp≥500	07/01/2007	3.0	5.0	1.0	200	610	80
		07/01/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤hp<1350	01/01/2008	3.0	5.0	1.0	220	610	80
		07/01/2010	2.0	5.0	1.0	150	610	80
Emergency	25<hp<130	01/01/2009	10	387	N/A	N/A	N/A	N/A
	hp≥130	01/01/2009	2.0	4.0	1.0	160	540	86

*ppmvd @ 15% O₂ = parts per million, volumetric dry at 15 percent oxygen

Compliance Demonstration Requirements

- Engines ≤ 25 hp or gasoline or rich burn LPG engines > 25 hp, the compliance demonstration is to use a certified engine.
- Engines > 25 hp using fuels other than gasoline and that are not rich burn LPG engines > 25 hp, the compliance demonstration is using a certified engine or conducting an initial performance test (depending on engine size, periodic testing may be required).
- Owners/operators must keep maintenance records for all engines subject to this NSPS, and a maintenance plan is required for non-certified engines, including certified engines that are being operated in a non-certified manner. Owners/operators of certified engines who do not follow the manufacturer's emission-related operation and maintenance procedures are considered to be operating non-certified engines, and thus are subject to performance testing.
- Owners/operators of certified engines < 100 hp that are operating in a non-certified manner are not required to conduct performance tests; however, owners/operators are required to maintain and operate the engines in a manner consistent with good practices to minimize emissions.
- Owner/operators of certified engines ≥ 100 hp ≤ 500 that are operating in a non-certified manner must conduct performance tests within the first year of engine operation.
- Owners/operators operating certified engines > 500 hp in a non-certified manner must conduct performance tests within the first year of operation and every 8,760 hours of operation or 3 years thereafter, whichever comes first.

Recordkeeping and Reporting Requirements

- Owner/operators of all engines are required to maintain records of proper maintenance and non-certified engines must have a maintenance plan.
- Initial notification is required for engines > 500 hp that are non-certified.
- Owners/operators of emergency engines are required to keep records of their hours of operation, e.g. must have a non-resettable hour meter.
- Owners/operators who are required to conduct performance testing on engines must report the results within 60 days of each performance test.

All notifications and performance test reports must be filed electronically to USEPA through the Electronic Reporting Tool: <https://www3.epa.gov/ttnchie1/ert/>.

For Additional Information on the SI NSPS

USEPA's IC Engine page: <http://www.epa.gov/ttn/atw/icengines/>

EPA Regions 1 and 10 RICE webpages—providing plain language summaries of RICE NESHAP & NSPS, sample Initial Notification and Notification of Compliance Status forms, events, state contacts, and links:

- <http://www.epa.gov/region1/RICE/> and
- http://yosemite.epa.gov/R10/airpage.nsf/Enforcement/rice_rules.

EPA Combustion Portal – provides calculators for CI RICE NESHAP, summary of NSPS, and other resources for combustion units: <http://www.combustionportal.org/>

Definitions

Certified engine - an engine manufacturer has received a certification on the emissions standards, e.g. an EPA Certificate of Conformity, for an engine manufactured in model year 2007 or later with a displacement of < 30 liters/cylinder.

Emergency engine (for NSPS purposes, different than that for NESHAP) - Operation limited to:

- Unlimited use for emergencies;
- 100 hours/year for maintenance/testing; and
- 50 hours/year of the 100 hours/year allocation can be used for non-emergency situations (if no financial agreement with any entity, including but not limited to a utility).

Non-road engine - An engine that is not used in a motor vehicle but is portable - Under the definition of nonroad engine in 40 CFR 1068.30, an engine is portable if it does not stay and is not intended to stay at a single location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. Portable (non-road) engines are not stationary engines for purposes of this rule. A facility may consult with its EPA regional office or request a site-specific applicability determination if it is uncertain whether an engine meets the criteria for a non-road or stationary engine. To view determinations already issued by EPA visit <http://cfpub.epa.gov/adi/>.

Stationary engine – an engine not used in a motor vehicle and not a non-road engine.

For Additional Questions Contact:

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