

# NESHAP for Stationary RICE at Area Sources

AM-511  
May 2016

## Overview

There are three federal regulations that apply to Reciprocating Internal Combustion Engines (RICE), depending on the type of engine and the date of construction: 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 SI and CI NSPS factsheets for more information on these rules.

This factsheet explains what you must do to comply with the NESHAP for Stationary RICE.

## NESHAP for Stationary RICE—At a Glance

- Applies to existing, new and reconstructed stationary engines (both CI and SI)
- Focus is on Hazardous Air Pollutants (HAPs)
- A RICE is an existing source if *commenced construction* before June 12, 2006, or it is a new source if constructed on or after that date.
  - ◆ *Commenced construction* means that the owner/operator has entered into a contractual obligation to undertake and complete, within a reasonable amount of time, a continuous program for the on-site installation of the engine.
- Compliance dates:
  - ◆ May 3, 2013 if you own an existing CI engine
  - ◆ October 19, 2013 if you own an existing SI engine

## Applicability

The NESHAP applies to existing, new and reconstructed engines, both CI and SI. However, new and reconstructed stationary engines located at any area source meet the requirements of the NESHAP by complying with the applicable NSPS, either Subpart IIII for CI engines or Subpart JJJJ for SI engines. Therefore, for area sources, the NESHAP applies to only existing sources, or those that were constructed prior to June 12, 2006. 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.

The NESHAP does NOT apply to existing emergency engines located at residential, institutional or commercial area sources. However, the RICE NSPS rules DO apply to new emergency engines including those located at residential, institutional or commercial area sources (see applicable NSPS standards).

## What Requirements Apply?—Emissions Limitations or Work Practice Standard

Table 1 below summarizes which emission limits or work practice standard (management practice) apply to different engines, regardless of age. Following the table is a description of each of the management practices listed in the table.



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**Table 1—NESHAP for engines of all sizes, ages, and uses**

<b>Existing engines as stated in the applicability section</b>						
HP	Non-Emergency					Emergency Or Black Start
	CI	SI *2SLB	SI *4S in remote areas	SI *4S not in remote areas	SI *LFG/DG	
≤300	Mgmt. Practice Standard 1	Mgmt. Practice Standard 2	Mgmt. Practice Standard 3	Mgmt. Practice Standard 3	Mgmt. Practice Standard 3	Mgmt. Practice Standard 5
300 – 500	****49 ppm CO or 70% CO reduction	Mgmt. Practice Standard 2	Mgmt. Practice Standard 3	Mgmt. Practice Standard 3	Mgmt. Practice Standard 3	Mgmt. Practice Standard 5
> 500	****23 ppm CO or 70% CO reduction	Mgmt. Practice Standard 2	Mgmt. Practice Standard 4	**4SLB: Install oxidation catalyst 4SRB: Install ***NSCR	Mgmt. Practice Standard 3	Mgmt. Practice Standard 5
<b>New engines as stated in the applicability section</b>						
Meet the requirements of the NESHAP by complying with the applicable NSPS, either Subpart IIII for CI engines or Subpart JJJJ for SI engines.						
* 2SLB = 2-stroke lean burn 4SLB = 4-stroke lean burn 4SRB = 4-stroke rich burn LFG/DG = landfill gas/digester gas ** If engine is used > 24 hrs/yr ***NSCR = non-selective catalytic reduction		****Existing non-emergency CI RICE > 300 hp at area sources that are certified to Tier 1 or Tier 2 and subject to a state/local rule that requires replacement of the engine can comply with management practices until January 1, 2015, or 12 years after the installation date of the engine, but not later than June 1, 2018. If the existing non-emergency CI RICE > 300 hp is certified to Tier 3 standards, the engine can comply with the NESHAP by complying with the NSPS for CI engines (Subpart IIII).				

**Management Practice Standard 1:**

- a. Change oil and filter and inspect air cleaner every 1,000 hours of operation or annually, whichever comes first.
- b. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first and replace as necessary.

**Management Practice Standard 2:**

- \* Change oil and filter, inspect spark plugs, and inspect hoses and belts every 4,320 hours of operation or annually, whichever comes first.

**Management Practice Standard 3:**

- \* Change oil and filter, inspect spark plugs, and inspect hoses and belts every 1,440 hours of operation or annually, whichever comes first.

**Management Practice Standard 4:**

- \* Change oil and filter, inspect spark plugs, and inspect hoses and belts every 2,160 hours of operation or annually, whichever comes first.

**Management Practice Standard 5:**

- a. Change oil and filter and inspect hoses and belts every 500 hours of operation or annually, whichever comes first.
- b. Inspect air cleaner (CI) or spark plugs (SI) every 1,000 hours of operation or annually, whichever comes first.

## Other Compliance, Recordkeeping and Reporting Requirements

### CI RICE > 300 hp:

- Conduct initial performance test
- Subsequent performance testing every 8,760 hours of operation or 3 years for engines > 500 hp (5 years if limited-use)
- Operation limitations – catalyst pressure drop and inlet temperature for engines > 500 hp
- Send required notifications to EPA
- Semiannual compliance reports
- Ultra low sulfur diesel fuel must be used
- Crankcase emission control requirements

### Existing non-emergency SI 4SLB/4SRB > 500 hp used > 24 hours/year and not in remote areas:

- Initial and annual catalyst activity checks
- High temperature engine shutdown or continuously monitor catalyst inlet temperature
- Send required notifications to EPA
- Semiannual compliance reports

### All emergency/black start engines; CI ≤ 300 hp non-emergency; SI ≤ 500 hp non-emergency; SI 2SLB > 500 hp non-emergency; SI LFG/DG > 500 hp non-emergency and SI 4SLB/4SRB > 500 hp in remote areas:

- Option 1 – Change oil/filter, inspect air cleaner or spark plugs and hoses/belts on the prescribed schedule; or
- Option 2 – May use oil analysis program instead of prescribed oil change frequency.
- In addition to option 1 or 2 above:
  - Operate/maintain engine and control device per manufacturer’s instructions or owner-developed maintenance plan.
  - Emergency engines must have a non-resettable hour meter, record hours of operation and document hours spent in emergency or non-emergency operation.
  - Keep records of maintenance.

### Further requirements for SI RICE > 500 hp in remote areas:

- Evaluate remote area status annually and keep records.
- If evaluation shows engine is no longer remote, comply with non-remote engine requirements within 1 year.

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 RICE NESHAP

USEPA’s IC Engine web 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](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

**Black start engine** – an engine whose only purpose is to start up a combustion turbine.

**Emergency engine** – an engine must meet the following definition to be considered an emergency engine under the NESHAP (different than that for NSPS):

- Unlimited use for emergencies (e.g. power outage, fire, flood).
- 100 hours/year for maintenance/testing.
- 50 hours of the 100 hours/year allocation can be used for non-emergency situations, as long as there is no financial arrangement 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 it meets the criteria specified to be considered a non-road or stationary engine. To view determinations already issued by EPA visit <http://cfpub.epa.gov/adi/>.

**Remote area** – location:

- An offshore area; or
- On a pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with 4 or more stories within 220 yards on either side of a continuous 1-mile length of pipeline (DOT Class 1 area), and the pipeline segment is not within 100 yards of a building or small well-defined outside area (playground, etc.); or
- Not on a pipeline and having 5 or fewer buildings intended for human occupancy and no buildings with 4 or more stories within a 0.25 mile radius around the engine.

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

## For Additional Questions Contact:

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