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

NESHAP for Stationary RICE

- Applies to existing, new and reconstructed stationary engines (both CI and SI)
- Focus is on Hazardous Air Pollutants (HAPs)
- For NESHAP purposes, your RICE is an existing source if constructed before June 12, 2006, a new source if constructed on or after that date.
- Compliance dates:
  - May 3, 2013 if you own an existing CI engine
  - October 19, 2013 if you own an existing SI engine
- 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.

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.

Applicability

The NESHAP applies to existing, new and reconstructed engines, both CI and SI. However, as stated in regulation, new or 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.

The NESHAP does NOT apply to existing emergency engines located at residential, institutional or commercial area sources used or obligated to be available ≤ 15 hours/year for emergency demand response, and not used for local reliability. However, the RICE rules DO apply to new emergency engines including those located at residential, institutional or commercial area sources (see applicable NSPS standards).

Definitions

Area source of HAP – a source 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.

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 and emergency demand response.
- 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, or
  - Local reliability (allowance for existing RICE at area sources of HAP only)
- Peak shaving is allowed, but only until May 3, 2014 (for existing RICE at area sources of HAP only)

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/](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.

<table>
<thead>
<tr>
<th>HP</th>
<th>Non-Emergency</th>
<th>Emergency Black Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI</td>
<td>Mgmt. Practice Standard 1</td>
<td>Mgmt. Practice Standard 5</td>
</tr>
<tr>
<td>SI *2SLB</td>
<td>Mgmt. Practice Standard 2</td>
<td>Mgmt. Practice Standard 3</td>
</tr>
<tr>
<td>SI *4S in remote areas</td>
<td>Mgmt. Practice Standard 3</td>
<td>Mgmt. Practice Standard 3</td>
</tr>
<tr>
<td>SI *4S not in remote areas</td>
<td>Mgmt. Practice Standard 3</td>
<td>Mgmt. Practice Standard 3</td>
</tr>
<tr>
<td>SI *LFG/DG</td>
<td>Mgmt. Practice Standard 3</td>
<td>Mgmt. Practice Standard 3</td>
</tr>
<tr>
<td>≤300</td>
<td>**49 ppm CO or 70% CO reduction</td>
<td>**4SLB: Install oxidation catalyst 4SRB: Install ***NSCR</td>
</tr>
<tr>
<td>300 – 500</td>
<td>Mgmt. Practice Standard 2</td>
<td>Mgmt. Practice Standard 4</td>
</tr>
<tr>
<td>&gt; 500</td>
<td>Mgmt. Practice Standard 2</td>
<td>Mgmt. Practice Standard 4</td>
</tr>
<tr>
<td></td>
<td>**423 ppm CO or 70% CO reduction</td>
<td>Mgmt. Practice Standard 3</td>
</tr>
</tbody>
</table>

New engines as stated in the applicability section
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).
**Stationary engine** – an engine not used in a motor vehicle and not a non-road engine.

**Emission Limitations:** Apply to all engines regardless of age

Management Practice Standard 1:
- change oil and filter and inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;
- 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:
- change oil and filter and inspect hoses and belts every 500 hours of operation or annually, whichever comes first;
- 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**

**Emergency CI** RICE > 100 hp and displacement < 30 liters/cylinder:

If operated or contractually obligated to be available > 15 hours/year (up to 100 hours/year) for emergency demand response or voltage/frequency deviation, or operated for local reliability (up to 50 hours/year), beginning January 1, 2015, must use ultra low sulfur diesel fuel after the existing inventory is depleted.

**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.
  - Reporting and ultra-low sulfur diesel (ULSD) use for emergency engines used for emergency demand response for local reliability.

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.

Additional Information on the RICE NESHAP: [http://www.epa.gov/ttn/atw/icengines/](http://www.epa.gov/ttn/atw/icengines/)

Questions contact:

Michelle Farley  
Air Management Engineer  
Wisconsin Department of Natural Resources  
(920) 662-5495  
michelle.farley@wisconsin.gov

Other Useful Compliance Tools
