

RICE
NESHAP
Finalized
Rule
Summary –
Spark
Ignited
Engines



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This document contains information regarding NESHAP finalized rule for spark ignited engines, compliance, testing and emission standards.



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RICE NESHAP Finalized Rule Summary

Spark Ignited Engines

Key Details for the Final Rule:

- Final Rule was released August 2010.
- Compliance will be required by September 2013 (three years after the Final Rule).
- The Final Rule will affect existing major source ($\leq 500\text{hp}$) and all existing area source IC engines.
- Standard maintenance/work practices requirements.
- Carbon Monoxide (CO) limits for certain Lean-Burn (LB) and Formaldehyde (CH_2O) limits for certain Rich-Burn (RB) engines.
- Emissions control technology such as Non-Selective Catalytic (NSCR) also known as 3-way catalyst for RB engines, oxidation catalyst for LB engines can be used to meet the proposed regulations.
- Monitoring system required to monitor catalyst temperature and pressure drop.

Key Definitions:

Major Source:

A site with the potential to emit a single Hazardous Air Pollutant (HAP) at the rate of 10 tons/yr or a combination of HAPs at a rate of 25 tons/yr.

Area Source:

Any stationary source of HAPs that is not a major source as defined above.

Emergency Engines:

Engines that operate less than 100 hours per year and may also operate the engine as part of an emergency demand response (DR) program for a maximum of 15 hours per year when regional transmission organization has determined there are emergency conditions that could lead to a potential electrical blackout or grid failure.

Non-Emergency Engines:

Engines that operate >100 hours per year or used in peak shaving programs or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity with the exception of emergency DR where financial arrangements are limited to emergency power.



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Existing vs. New/Reconstructed Engine:

The definition of new/reconstructed engine vs. an existing engine is dependent on the type of engine, whether the engine is classified as a major or area source and the rated HP.

Existing Engine

- All HP area source engines that were constructed/reconstructed before June 12, 2006.
- Engines \leq 500 HP located at a major source and constructed/reconstructed before June 12, 2006.

RICE NESHAP Finalized Rule Summary Existing Major Source

Existing Major Source RICE

Engine Type	Compliance Requirements
Non-Emergency SI <100 hp that are not 2SLB	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 1440 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 1440 hours of operation or annually, whichever comes first. ▪ Inspect all hoses and belts every 1440 hours of operation or annually, whichever comes first, and replace if necessary.
Non-Emergency SI 2SLB < 100 hp	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 4320 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 4320 hours of operation or annually, whichever comes first. ▪ Inspect all hoses and belts every 4320 hours of operation or annually, whichever comes first, and replace if necessary.
Non-Emergency SI 2SLB 100 ≤ hp ≤ 500	225 ppmvd CO @ 15% O ₂
Non- Emergency SI 4SLB 100 ≤ hp ≤ 500	47 ppmvd CO @ 15% O ₂
Non- Emergency SI 4SRB 100 ≤ hp ≤ 500	10.3 ppmvd CH ₂ O @ 15% O ₂
Non-Emergency SI LFG/DG	177 ppmvd CO @ 15% O ₂
Emergency SI RICE	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil filter every 500 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 1000 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 if necessary.



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RICE NESHAP Finalized Rule Summary Existing Area Source

Existing Area Source RICE

Engine Type	Compliance Requirements
Non-Emergency SI 2SLB	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 4320 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 4320 hours of operation or annually, whichever comes first. ▪ Inspect all hoses and belts every 4320 hours of operation or annually, whichever comes first, and replace if necessary.
Non-Emergency SI 4SLB & 4SRB ≤500 hp	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 1440 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 1440 hours of operation or annually, whichever comes first. ▪ Inspect all hoses and belts every 1440 hours of operation or annually, whichever comes first, and replace if necessary.
Non-Emergency SI 4SLB >500	<p>47 ppmvd CO @ 15% O₂ or 93% CO reduction</p>
Non- Emergency SI 4SRB >500	<p>2.7ppmvd CH₂O @ 15% O₂ or 76% CH₂O reduction</p>
Non-Emergency SI LFG/DG	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 1440 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 1440 hours of operation or annually, whichever comes first. ▪ Inspect all hoses and belts every 1440 hours of operation or annually, whichever comes first, and replace if necessary.
Emergency SI RICE	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil filter every 500 hours of operation or annually, whichever comes first, except that sources can extend the period for changing the oil if the oil is part of an oil analysis program. ▪ Inspect spark plugs every 1000 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 if necessary.



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RICE NESHAP Compliance Requirements
Major vs. Area Source

Operating & Testing Requirements

	Engine	Testing Requirements
	All engines equipped with NSCR or Oxidation Catalysts	<ul style="list-style-type: none"> Pressure drop must be measured monthly, and cannot change by >2" w.c. across the catalyst from that which was measured during the initial performance test. Must continuously monitor and record the catalyst inlet temperature, and maintain between 450-1350 °F (oxidation)/ 750-1250°F (NSCR).
M A J O R	Existing non-emergency RICE <100 hp & All emergency RICE	<ul style="list-style-type: none"> Operate and maintain engine and emission control equipment (if any) according to the manufacturer's emission-related instructions or develop own maintenance plan. Do not need to conduct any performance testing.
	Existing non-emergency SI RICE 100 ≥ hp ≤ 500	<ul style="list-style-type: none"> Conduct an initial performance test to demonstrate that the required emission standards are being achieved. No subsequent performance tests required.
A R E A	Existing non-emergency SI 2SLB, LFG/DG & Emergency SI	<ul style="list-style-type: none"> Must develop a maintenance plan that specifies how the management practice will be met. Do not need to conduct any performance testing.
	Existing non-emergency SI 4SLB & 4SRB ≤ 500 hp	<ul style="list-style-type: none"> Must develop a maintenance plan that specifies how the management practice will be met. Do not need to conduct any performance testing.
	Existing non-emergency SI 4SLB, & 4SRB engines >500 hp	<ul style="list-style-type: none"> Conduct an initial performance test and test every 8,760 hours of operation or 3 years, which ever comes first, to demonstrate that the required standards are being achieved.

The full proposed rule can be found at: www.epa.gov/ttn/orapg/new.html