

RICE
NESHAP
Finalized
Rule
Summary –
Diesel
Compression
Ignited
Engines



May 3
2013

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



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RICE NESHAP Finalized Rule Summary

Diesel Compression Ignited Engines

Key Details:

- Final Rule was released February 2010.
- Compliance will be required by May 2013 (three years after the Final Rule).
- Carbon Monoxide (CO) limits for specific CI engines.
- Standard maintenance/work practices requirements.
- Emissions control technology such as oxidation catalyst can be used to meet the proposed regulations.
- Monitoring system required to monitor catalyst temperature and pressure drop.
- Non-Emergency engines >300 HP at major or area source sites need to install a crankcase filtration system.

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 25tons/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 ≤ 500 HP located at a major source and constructed/reconstructed before June 12, 2006.
- Non-emergency CI engines > 500 HP located at a major source constructed/reconstructed before December 19, 2002.



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RICE NESHAP Finalized Rule Summary Existing Major Source

Existing Major Source RICE

Engine Type	Compliance Requirements
Non-Emergency CI < 100hp	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 1000 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 air cleaner 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.
Non-Emergency CI 100 ≤ hp ≤ 300	230 ppmvd CO @ 15% O ₂
Non-Emergency CI 300 < hp ≤ 500	<p style="text-align: center;">49 ppmvd CO @ 15% O₂ or 70% CO reduction</p> <ul style="list-style-type: none"> ▪ Need to install an open crankcase filtration system or closed crankcase ventilation system if the engine does not originally have one to reduce metallic HAP emissions.
Non-Emergency CI >500 hp	<p style="text-align: center;">23 ppmvd CO @ 15% O₂ or 70% CO reduction</p> <ul style="list-style-type: none"> ▪ Need to install an open crankcase filtration system or closed crankcase ventilation system if the engine does not originally have one to reduce metallic HAP emissions.
Emergency CI ≤ 500	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and 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 air cleaner 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.

In addition: Existing stationary non-emergency diesel-fueled CI engines > 300 hp with a displacement < 30 L/cylinder must use diesel fuel with a maximum sulfur content of 15ppm and either a cetane index < 40 or aromatic content ≤ 35% volume.



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RICE NESHAP Finalized Rule Summary Existing Area Source

Existing Area Source RICE

Engine Type	Compliance Requirements
Non-Emergency CI ≤ 300hp	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and filter every 1000 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 air cleaner 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.
Non-Emergency CI 300 < hp ≤ 500	<p style="text-align: center;">49 ppmvd CO @ 15% O₂ or 70% CO reduction</p> <ul style="list-style-type: none"> ▪ Need to install an open crankcase filtration system or closed crankcase ventilation system if the engine does not originally have one to reduce metallic HAP emissions.
Non-Emergency CI > 500	<p style="text-align: center;">23 ppmvd CO @ 15% O₂ or 70% CO reduction</p> <ul style="list-style-type: none"> ▪ Need to install an open crankcase filtration system or closed crankcase ventilation system if the engine does not originally have one to reduce metallic HAP emissions.
Emergency CI	<p style="text-align: center;">Management Practice</p> <ul style="list-style-type: none"> ▪ Change oil and 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 air cleaner 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.

In addition: Existing stationary non-emergency diesel-fueled CI engines > 300 hp with a displacement < 30 L/cylinder must use diesel fuel with a maximum sulfur content of 15ppm and either a cetane index < 40 or aromatic content ≤ 35% volume.



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RICE NESHAP Compliance Requirements Major vs. Area Source

Operating & Testing Requirements

	Engine Type & Source	Testing Requirements
	All Major or Area engines equipped with 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.
M A J O R	Existing non-emergency < 100 hp & emergency CI RICE at major sources	<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 their own maintenance plan. Do not need to conduct any performance testing.
	Existing non-emergency CI RICE at major sources 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 testing required.
	Existing non-emergency CI RICE at major sources > 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 emission standards are being achieved.
	Emergency Major Source	<ul style="list-style-type: none"> No emission testing required.
A R E A	Existing RICE at area sources subject to Management Practices	<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 RICE at area sources 300 < 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 testing required.
	Existing non-emergency RICE at area sources > 500hp	<ul style="list-style-type: none"> Conduct an initial performance test and test every 8,760 hours of operation of 3 years, which ever comes first, to demonstrate that the required standards are being achieved.
	Emergency Area Source	<ul style="list-style-type: none"> No emission testing required.

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