MIRATECH CORPORATION

RICE NESHAP Summary - CI Engines

WHY MIRATECH SOLUTIONS?

- Track record: over 10,000 installations worldwide
- Comprehensive solutions: 100 - 10,000 hp engines
- Better-designed, better-built, longer-lasting, better-performing systems
- Support for performance testing
- On-going compliance assured: *all* regulated emissions for any regulations, anywhere
- Custom engineering – tailored to your needs
- Fast turntimes
- Prompt, responsive service

RICE NESHAP Emissions Standards

HP	Standard At 15% O_2*	MIRATECH Solution
Existing, Non-Emergency Stationary Diesel Engines Major Sources		
100 ≤ hp ≤ 300	230 ppmvd CO	Diesel Oxidation Catalyst
301 ≤ hp ≤ 500	49 ppmvd CO *OR* 70% CO reduction**	Diesel Oxidation Catalyst
> 500 hp	23 ppmvd CO *OR* 70% CO reduction**	Diesel Oxidation Catalyst
Area Sources		
301 ≤ hp ≤ 500	49 ppmvd CO *OR* 70% CO reduction**	Diesel Oxidation Catalyst
> 500 hp	23 ppmvd CO *OR* 70% CO reduction**	Diesel Oxidation Catalyst
New/Rebuilt, Non-Emergency Stationary Diesel Engines Major Sources		
> 500 hp	23 ppmvd CO *OR* 70% CO reduction**	Diesel Oxidation Catalyst

*ppmvd: parts per million by volume, dry measure CO: Carbon Monoxide * Non-startup emissions ** Operator's choice*

Major Source: any site emitting *either* 10 or more tons per year of any *one* HAP (e.g., formaldehyde) *or* 25 tons or more per year of *any combination* of HAPs (e.g., formaldehyde + acrolein).

Area Source: any site that is not a *major source.*

Existing Non-Emergency Engines:

- Engines used at *major sources* of HAPs: 500 hp or less and built before 6/12/06
- Engines used at *major sources* of HAPs: greater than 500 hp and built before 12/19//02
- Engines used at *area sources* of HAPs: all horsepower sizes built before 6/12/06

New / Rebuilt Non-Emergency Engines: above 500 hp (Model / Rebuild year 2010) and used at *major sources.*

Quote Request: 2-Stroke *Click here*

Quote Request: 4-Stroke *Click here*

RICE NESHAP

Reciprocating Internal Combustion Engines – National Emissions Standards for Hazardous Air Pollutants

Effective May 3, 2010
Full compliance deadline - Compression Ignition Diesels: May 3, 2013

Designed to reduce RICE emissions of 189 EPA-listed Hazardous Air Pollutants (HAPs)

What it means to you

Depending on engine hp and siting, requirements may include:

- Diesel oxidation catalyst to meet CO limit
- Monitoring to continuously measure pre-/post-catalyst backpressure and exhaust temperature
- Limits on startup time
- Performance tests to demonstrate emissions compliance
- Maintenance requirements
- Ultra Low Sulfur Fuel
- Closed crankcase vent or crankcase vent filter system

Emergency Engines: Exempt from HAPs Emissions Standards

- Emergency engine exemptions do not apply to engines used in demand-response, peak shaving or storm-avoidance applications.
- **Emergency engines run only in emergencies or during a loss of the normal power** (apart from maintenance & testing runs). Examples: standby generators, flood control pumps, etc.

Monitoring, Testing And Other Requirements: Please turn this page over.

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RICE NESHAP Summary - CI Engines

RICE NESHAP

Monitoring, Testing And Other Requirements: Existing Non-Emergency Engines > 300 HP

HP	Source Category	Continuous Parametric Monitoring (CPMS)*	Testing	Other
300 ≤ hp ≤ 500	Major & Area	No	Initial compliance verification with oxidation catalyst	• Closed crankcase vent or crankcase vent filter system • Ultra low sulfur fuel (15 ppm sulfur max)
>500 hp	Major	Yes	Initial verification; re-test after 8,760 hrs. operation or 3 yrs. (whichever comes first) • Continuous monitoring & recording: catalyst inlet temp. • Monthly monitoring: pressure drop across catalyst	• Closed crankcase vent or crankcase vent filter system • Ultra low sulfur fuel. (15 ppm sulfur max)
>500 hp	Area	Yes	Initial verification; re-test after 8,760 hrs. operation or: – **Limited Use Engines:** 5 yrs. *(operating hours ≤ 100 hrs./yr.)* – **Not Limited Use Engines:** 3 yrs. *(operating hours > 100 hrs./yr.)* whichever comes first • Continuous monitoring & recording: catalyst inlet temp. • Monthly monitoring: pressure drop across catalyst	• Closed crankcase vent or crankcase vent filter system • Ultra low sulfur fuel. (15 ppm sulfur max)

* CPMS: Continuous Parametric Monitoring System performance standards scheduled for finalization in August, 2010

RICE NESHAP Information

EPA Release Feb. 17, 2010 – changes to proposed rule and public comments on RICE NESHAP
http://www.epa.gov/ttn/oarpg/t3/fr_notices/rice_neshap_021710.pdf

EPA Fact Sheet on RICE NESHAP
http://www.epa.gov/ttn/oarpg/t3/fact_sheets/rice_neshap_fs_021710.pdf

Technology Transfer
http://www.epa.gov/ttn/oarpg/new.html

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE NESHAP) – Docket#OAR-2002-0059
http://www.epa.gov/ttn/atw/rice/ricepg.html

RICE NESHAP Applicability Flowchart (EPA)
Click here

Form you may be required to submit: Initial Notification of Applicability (Example)
Click here

Quote Request: 2-Stroke *Click here*

Quote Request: 4-Stroke *Click here*