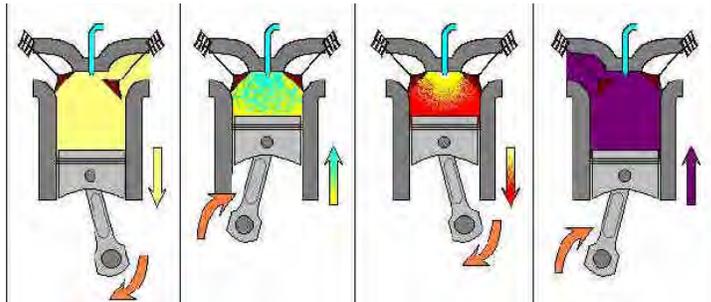


**Michigan Department of Environmental Quality
Office of Environmental Assistance**



**Compression Ignition Engines
NESHAP Subpart ZZZZ
April 2011**

**Dan Wyant, Director
Rick Snyder, Governor**

**Michigan Department of Environmental Quality
www.michigan.gov/deg 800-662-9278**

We acknowledge the following companies for their assistance in developing this document:



The “Compression Ignition Engines: NESHAP Subpart ZZZZ” guidebook was developed in April 2011 by the Michigan Department of Environmental Quality’s Office of Environmental Assistance. It is intended for guidance and compliance assistance purposes only and may be impacted by changes



Table of Contents

INTRODUCTION.....1

APPLICABILITY.....2

REQUIREMENTS – Table I: Summary of CI Stationary RICE.....6

WHERE TO GO FOR ADDITIONAL INFORMATION.....9

OTHER REGULATIONS.....9

APPENDIX A: Definitions.....

APPENDIX B: List of RICE.....

APPENDIX C: Recordkeeping for Work Practice Standards (oil and filter changes, air cleaner, hoses and belts).....

APPENDIX D: Initial Notification for Stationary Reciprocating Internal Combustion Engines (RICE) Instructions and Form.....

APPENDIX E: Notification of Compliance Status for Stationary Reciprocating Internal Combustion Engines (RICE) Instructions and Form.....

APPENDIX F: Notification of Performance Testing for Stationary Reciprocating Internal Combustion Engines (RICE) Instructions and Form.....

APPENDIX G: Summary of the U.S. EPA New Source Performance Standard Subpart IIII.....

INTRODUCTION

One of the goals of the federal Clean Air Act is to reduce the emission of Hazardous Air Pollutants (HAPs). The reduction of HAPs is achieved through the promulgation of, and compliance with, emission standards for categories of sources that emit HAPs. The United States Environmental Protection Agency (U.S. EPA) identified 30 HAPs that pose the greatest threat to public health in urban areas. The U.S. EPA has identified categories of sources that account for 90 percent of the release of these particular HAPs and is now promulgating standards to reduce their emissions. These federal standards are referred to as the National Emissions Standards for Hazardous Air Pollutants (NESHAP).



The NESHAP for Reciprocating Internal Combustion Engines (RICE) regulates the operation of stationary RICE. The NESHAP is also known as Subpart ZZZZ, and is published in the Federal Register under Title 40, Part 63, Subpart ZZZZ of the Code of Federal Regulations (40 CFR 63). The NESHAP can be found at www.epa.gov/ttn/atw/rice/ricepg.pdf. To assist you in cross-referencing the Federal Register notice, sections of Subpart ZZZZ are identified throughout this guide (e.g. § 63.6530).

The NESHAP ZZZZ consists of four standards, or four rules. The standards were developed with the first rule, promulgated in 2004, regulating RICE with site ratings greater than 500 hp at only the major sources. In 2008, the second rule incorporated RICE with site ratings less than and equal to 500 hp at major sources, as well as area sources with RICE greater than 500 hp. The last two rules finalizing the NESHAP ZZZZ were promulgated in 2010 and expanded those regulated by adding RICE with site ratings equal to or less than 500 hp at area sources.

The U.S. EPA is regulating the HAPs emitted from these engines by limiting and measuring the carbon monoxide (CO) from the engines. CO is one of the U.S. EPA's six criteria pollutants with set standards for their limit in the environment. Exposure to CO has been shown to cause serious health problems, such as damage to the heart, and negative impacts to memory, brain function, behavior, and cognition.

This fact sheet will provide a summary of the NESHAP ZZZZ requirements for **compression ignition engines only**. The NESHAP ZZZZ also regulates other RICE, such as spark ignition engines, however these requirements will be summarized in a separate fact sheet.

The following discussion of the NESHAP begins with who is subject to the rule. This is followed by a table summarizing the requirements broken down by source and engine type. The table cross references with the Federal Register notice to enable further understanding of your requirements. This document is to be used only as a guide and not a substitute for reading and understanding the federal requirements.

APPLICABILITY

1st Determine if you have a **stationary RICE compression ignition (CI) engine**.

The U.S. EPA defines the following:

A stationary reciprocating internal combustion engine (RICE) uses reciprocating motion to convert heat energy into mechanical work and is not mobile. A stationary RICE differs from a mobile RICE since it is not a non-road engine (all internal combustion engines except motor vehicle engines, stationary engines, engines used solely for competition, or engines used in aircraft), and is not used to propel a motor vehicle or a vehicle used solely for competition.

Compression ignition is a type of stationary internal combustion engine that is not a spark ignition engine. A spark ignition means relating to either: A gasoline-fueled engine, or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for chlorine and gaseous fuel (typically natural gas) is used as the primary fuel, at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis, are spark ignition engines.

If you do not operate a stationary CI engine, this fact sheet and requirements do not pertain to you; however, there may be other regulations that do apply. Please refer to the end of this document for further information.

Please refer to Appendix A for the U.S. EPA definitions of the many terms used in Subpart ZZZZ.

2nd Find out if you are considered a **Major Source** or an **Area Source** of HAP emissions.

A major source of HAP emissions have the potential to emit 10 tons per year (tpy) or more of any single HAP, or 25 tpy or more of combined HAPs.

An **area source** or **minor source** is any stationary source of HAP emissions that is not a major source.

The potential to emit (PTE) is the maximum capacity of HAP emissions a source could emit in a year given its physical and operational design. Your PTE can include reductions for control equipment or other process limitations if they are included in a federally enforceable permit or applicable federal regulation.

If you don't know what your PTE is, you can refer to the Michigan Department of Environmental Quality (DEQ) "Potential to Emit Workbook" located at www.michigan.gov/environmentalassistance. Select "Clean Air Assistance" under "Related Links" and scroll down to "Air Permits (Permits to Install)" under the heading "Air Permitting." Scroll down to "Technical Resources" and you will find the workbook. If you need further assistance, please contact the Office of Environmental Assistance (OEA), DEQ at 800-662-9278.

3rd Consider how you use your engine. Is it an **emergency or non-emergency** CI RICE? And is the RICE a **black start** engine? Is the engine considered a **limited use** engine?

An emergency stationary RICE is any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance.

Emergency engines:

- Can supply **emergency** power as part of a financial agreement.
- Do not have a limit on their operating emergency hours.
- Can operate in non-emergency situations up to 100 hours per year, which includes required testing and maintenance and 50 hours non-emergency operating, as long as it is not for peak shaving. The 100 hours includes 15 hours per year if it is operating as part of an emergency demand response program. Note: This is currently being reconsidered by US EPA, please go to the US EPA RICE website at www.epa.gov/ttn/atw/rice/ricepg for current information on this reconsideration.

A commercial emergency stationary RICE is an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

An institutional emergency stationary RICE is an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

A residential emergency stationary RICE is an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

A non-emergency stationary RICE is an engine:

- Used for peak shaving.
- Used to supply power to an electric grid or that supplies non-emergency power as part of a financial agreement.

A black start engine is an engine whose only purpose is to start up a combustion turbine.

A limited use engine operates less than 100 hours per year.

4th Verify the engine's site rating in brake horse power (HP) for each CI RICE. If you don't know this, find the serial number and/or model number from your engine's nameplate and contact the engine manufacturer. The manufacturer can identify the engine's site rating for you.

NOTE: You will also need to know the displacement in liters per cylinder for each engine with a site rating above 300 brake HP.

5th Determine if your RICE is considered existing, new or reconstructed.

If you're a major source and your CI RICE has a site rating over 500 HP:

- Existing means the engine was installed or built on-site before December 19, 2002.
- New or reconstructed means the engine was installed or built on or after December 19, 2002. A change in ownership does not make an existing engine new.

If you're a major or area source with a CI RICE equal to or under 500 HP:

- Existing means the engine was installed or built on-site before June 12, 2006.
- New or reconstructed means the engine was installed or built on site on or after June 12, 2006.

By now you should know the following about your RICE:

Stationary CI RICE

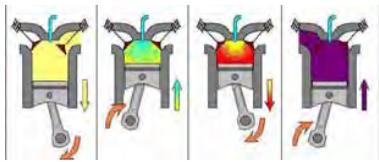
Major Source or **Area Source**

Emergency or **Non-Emergency**, **Black Start**, **Limited Use**

_____ **Engine site rating** (brake HP)

Existing source or **New/reconstructed source**

If you have more than one stationary CI RICE, please go to Appendix B for additional copies of the above box. This will assist you in maintaining the details for each engine. Also, if this is the case, you may want to include the serial number and the location of the engine in the facility to help you discern the engine from others in your files.



Work Practice Standards – refers to best management practices required
Operating Limits – are limits placed on control equipment
Tests – various tests required depending on your engine
Monitor – requirements regarding monitoring of engine.
Records – all records that you are required to maintain
Notifications – provided to US EPA and/or your state regulatory agency
Compliance Date – the date by which you must meet the requirements of the NESHAP

REQUIREMENTS: Compression Ignition Engines NESHAP Subpart ZZZZ

Table 1 summarizes the Subpart ZZZZ requirements for each CI RICE source and engine type. Please refer to the beginning of this guidance document to determine your source and engine type. Each table heading includes the regulatory citation from 40 CFR Part 63 NESHAP Subpart ZZZZ. This table is to be used only as a guide and not a substitute for reading and understanding the federal requirements.

Please refer to the federal citation for further information on the specific engine requirement.

TABLE 1: Summary of CI Stationary RICE Subpart ZZZZ Requirements

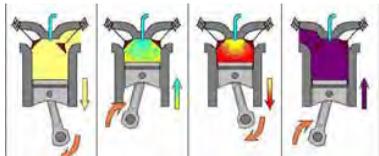
Source Type [§63.6585; 63.6590]		Engine Type^o		Emission Standards (Limits) [§63.6602]; Table 2c		Work Practice Standards¹ [§63.6603]; Table 2c			Startup [§63.6600, 63.6602, 63.6625(h)]	Operating Limits [§63.6603, Table 2b]	Tests [§63.6610, 63.6612, 63.6615, 63.6620]	Monitor [§63.6625, 63.6635, 63.6640]	Records [§63.6655, 63.6660]	Notifications² [§63.6645]	Compliance Date [§63.6595]
		Site Rating	Specific Engine	CO (@ 15% O ₂)	Sulfur	Oil & Filter	Air Cleaner	Hoses & Belts	(< 30 min.)		(initial performance test w/i 180 days after compliance date)		(copies of notifications if required)		
Major	Existing	> 500 hp ¹	Non-emergency Non-black start	23 ppmvd ³ (or reduce CO by 70%)					Yes	Yes	Initial Performance & ReTest (Table 3, 4, 5)	Temp & Pressure	Maintenance for OC/CC & Performance Test	Yes	5/3/2013
Major	Existing	>300 hp < 500 hp ¹	Non-emergency Non-black start	49 (or reduce CO by 70%)	15				Yes	Yes	Initial Performance [§63.6620]		Main for OC/CC & Performance Test	Yes	5/3/2013
Major	Existing	> 100 hp ≤ 300 hp	Non-emergency Non-black start	230 ppmvd					Yes	No	Initial Performance		Performance Test, Work & Malfunction Records	Yes	5/3/2013
Major	Existing	≤ 100 hp	Non-emergency Non-black start			change every 1,000 hr (or annually, first)	inspect every 1,000 hrs	inspect every 500 hrs	Yes	No	Maintenance Plan		Work & Malfunction, Records	No	5/3/2013
Major	Existing	> 500 hp	Landfill or Digester Gas-fired												Not subject [§63.6600(c) and 63.6640(e)]

^o For Non-emergency, Non-black start engines with a site rating of more than 300 hp with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the specific requirements in 40 CFR 80.510(b). [§63.6604]

¹ The DEQ-OEA has developed a work practice recordkeeping form that you can use to comply with these requirements. Please refer to Appendix C for a copy.

² The DEQ OEA has developed an initial notification, a notification of compliance status and a notification of performance testing form that you can use to comply with these requirements. Please refer to Appendices D-F for copies.

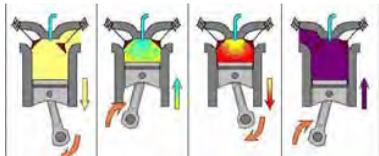
³ ppmvd = parts per million of volume dry.



Compression Ignition Engines NESHAP Subpart ZZZZ

Source Type [§63.6585; 63.6590]		Engine Type ⁹		Emission Standards (Limits) [§63.6602]; Table 2c		Work Practice Standards ¹ [§63.6603]; Table 2c			Startup [§63.6600, 63.6602, 63.6625(h)]	Operating Limits [§63.6603, Table 2b]	Tests [§63.6610, 63.6612, 63.6615, 63.6620]	Monitor [§63.6625, 63.6635, 63.6640]	Records [§63.6655; 63.6660]	Notifications ² [§63.6645]	Compliance Date [§63.6595]
Major	Existing	≥ 100 hp ≤ 500	Non-emergency Landfill or Digester Gas-fired	177ppmvd [63.6602, Table 2c]					Yes	No	Initial Performance		Maintenance and Performance Test	Yes	10/19/2013
Major	Existing	> 100 hp	Non-emergency Landfill or Digester Gas-fired						Yes	No				No	10/19/2013
Major	Existing	> 500 hp	Limited Use	No Requirements											
Major	Existing	> 500 hp	Emergency Black start	No other requirements except §63.6640(f)(i)-(iii)											
Major	Existing	≤ 500 hp	Emergency Black start			change every 500 hrs* [§63.660 2, Table 2c, 63.6625(h)]	inspect every 1,000 hrs [§63.6602, Table 2c]	inspect every 500 hrs [§63.6602, Table 2c]		Yes	Maintenance Plan [§63.6640(f)(i)-(iii)]	Non-resettable hour meter [§63.6625(f)]	Work & Malfunction Records [§63.6625(e)]	No	5/3/2013
Major	New Reconstructed	> 500 hp	Non-emergency Non black start	By 70%* [§63.600(b), Table 2a] or formaldehyde conc. Limit to 580 ppbvd						Yes If using an oxidation catalyst [§63.600(b), Table 2b]	Initial [§63.6610, 63.6615, 63.6620, Table 3, 4, 5]	Temp & Pressure [§63.6625(a),(b),(h),(k)]	Maintenance for OC [§63.6655, except (c),(e),(f)]	Yes [§63.6645]	Upon Startup
Major	New Reconstructed	> 500 hp	Emergency or Limited Use							No	§63.6640(f)(i)-(iii)			Yes [§63.6645(f)]	Upon Startup
Major	New Reconstructed	≤ 500 hp		Must comply with NSPS IIII (refer to Appendix G) ⁴											
Area	Existing	> 500 hp ¹	Non-emergency Non black start	23 ppmvd (or reduce CO by 70%) [§63.6603,					Yes	Yes	Initial & ReTest [§63.6612, 63.6615, 63.6620, Table 3, 4, 5]	Temp & Pressure	Main for OC/CC	Yes	5/3/2013

⁴ Note: As a major or area source considered new/reconstructed your requirements under the Subpart ZZZZ are to comply with the NSPS IIII, however the owners and operators subject to the NSPS IIII are only CI engines constructed after July 11, 2005 and the engine was manufactured on or after April 1, 2006. Please refer to Appendix G for further information.



Compression Ignition Engines NESHAP Subpart ZZZZ

Source Type [§63.6585; 63.6590]		Engine Type ⁹		Emission Standards (Limits) [§63.6602]; Table 2c		Work Practice Standards ¹ [§63.6603]; Table 2c			Startup [§63.6600, 63.6602, 63.6625(h)]	Operating Limits [§63.6603, Table 2b]	Tests [§63.6610, 63.6612, 63.6615, 63.6620]	Monitor [§63.6625, 63.6635, 63.6640]	Records [§63.6655, 63.6660]	Notifications ² [§63.6645]	Compliance Date [§63.6595]
				Table 2d]											
Area	Existing	>300 hp, ≤ 500 hp ¹		49 (or reduce CO by 70% [§63.6603, Table 2d]				Yes	No	Initial Performance [§63.6612, 63.6620, Table 4, 5]		Main for OC/CC	Yes	5/3/2013	
Area	Existing	≤ 300 hp				change every 1,000 hr (or annually, first) (oil analysis program*) [§63.662 5(i)]	inspect every 1,000 hrs	inspect every 500 hrs	Yes	No	Maintenance Plan	If closed ccvs, must install ccsvs or ocfcvs [§63.6625(g)]	Work & malfunction records	No [§63.6645 (a)(5)]	5/3/2013
Area	Existing		Landfill or Digester Gas-fired							No	Maintenance Plan [§63.66.25(e)]				
Area	Existing		Emergency Black start			500 (oil analysis program) [Table 2d]	1,000	500	Yes	No	Maintenance Plan	Non-resettable hour meter [§63.6625(f)]	Work & malfunction records	No	5/3/2013
Area	Existing		Emergency – residential, commercial, institutional												No other requirements except §63.6640(f)(i)-(iii)
Area	New Reconstructed [§63.6603]														Must comply with NSPS IIII (refer to Appendix G) ⁵

* Option to utilize an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency as oil changes are required, and the program must analyze the parameters and keep records as required in §63.6625(i).

⁵ Note: As a major or area source considered new/reconstructed your requirements under the Subpart ZZZZ are to comply with the NSPS IIII, however the owners and operators subject to the NSPS IIII are only CI engines constructed after July 11, 2005 and the engine was manufactured on or after April 1, 2006. Please refer to Appendix G for further information.



WHERE TO GO FOR ADDITIONAL INFORMATION

For answers to questions regarding the state and federal requirements, please contact the OEA at 800-662-9278. The OEA has established a Web site for these requirements. Go to www.michigan.gov/environmentalassistance, and select "Clean Air Assistance" under "Related Links" and then select "RICE" under "Federal Regulation."

The Web site also contains links to this guide, the initial notification form, and the federal Web site for Subpart ZZZZ (<http://www.epa.gov/ttn/atw/rice/ricepg.html>).

For information on other state environmental compliance and small business programs, please go to the Small Business Environmental HOME PAGE located at <http://www.smallbiz-enviroweb.org/>. From there you can connect to both your state environmental compliance and small business assistance programs.

OTHER REGULATIONS

FEDERAL

Please refer to Appendix G for a summary of the U.S. EPA New Source Performance Standard (NSPS) Subpart IIII. This Subpart established minimum requirements for new or modified/reconstructed CI (diesel-fired) engines based on size, type and the manufacture date. Also, if you are subject to Subpart IIII, your requirements under Subpart ZZZZ may be reduced (only notification requirements) or exempted. The Subpart can be found in the Federal Register notice published July 11, 2006, with proposed amendments published on June 8, 2010. The NSPS can be found at <http://www.epa.gov/ttn/atw/nsps/cinsps/fr11jy06.pdf>. The notice is published in Title 40, Part 60, 85, et al. Subpart IIII of the Code of Federal Regulations.

STATE

As you become compliant with the federal air regulations, make sure you comply with the Michigan DEQ air requirements. The CI RICE may also be required to obtain an Air Permit to Install (PTI). For further information, please go to the DEQ PTI Web site located at www.michigan.gov/air, and select "Permits" under "Air" and then select "Permits to Install/New Source Review (PTI/NSR)" under "Information." If you have additional questions, please contact the OEA at 800-662-9278.

Please refer to the Small Business Environmental Web page at <http://www.smallbiz-enviroweb.org/> for information on other State Air Programs and their Web sites.

APPENDIX A

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

The following definitions are taken directly from the NESHAP Subpart ZZZZ:

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

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

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101–549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless of whether or not such failure is permitted by this subpart.

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

(4) Fails to satisfy the general duty to minimize emissions established by §63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary RICE used to supply power to an electric grid or that supply non-emergency power as part of a financial arrangement with another entity are not considered to be emergency engines, except as permitted under §63.6640(f). All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in §63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.*, remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in §63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to §63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to §63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and

DEFINITIONS

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

NESHAP

40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 – 63.6675]

the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

APPENDIX B

LIST OF RICE

LIST OF RICE

Engine SERIAL NUMBER _____

Location at Facility _____

<input type="checkbox"/> Stationary CI RICE		
<input type="checkbox"/> Major Source	or	<input type="checkbox"/> Area Source
<input type="checkbox"/> Emergency or <input type="checkbox"/> Non-Emergency , <input type="checkbox"/> Black Start , <input type="checkbox"/> Limited Use		
_____ Engine site rating (brake HP)		
<input type="checkbox"/> Existing source	or	<input type="checkbox"/> New/reconstructed source

Engine SERIAL NUMBER _____

Location at Facility _____

<input type="checkbox"/> Stationary CI RICE		
<input type="checkbox"/> Major Source	or	<input type="checkbox"/> Area Source
<input type="checkbox"/> Emergency or <input type="checkbox"/> Non-Emergency , <input type="checkbox"/> Black Start , <input type="checkbox"/> Limited Use		
_____ Engine site rating (brake HP)		
<input type="checkbox"/> Existing source	or	<input type="checkbox"/> New/reconstructed source

Engine SERIAL NUMBER _____

Location at Facility _____

<input type="checkbox"/> Stationary CI RICE		
<input type="checkbox"/> Major Source	or	<input type="checkbox"/> Area Source
<input type="checkbox"/> Emergency or <input type="checkbox"/> Non-Emergency , <input type="checkbox"/> Black Start , <input type="checkbox"/> Limited Use		
_____ Engine site rating (brake HP)		
<input type="checkbox"/> Existing source	or	<input type="checkbox"/> New/reconstructed source

APPENDIX C

WORK PRACTICE STANDARDS
RECORDKEEPING for NESHAP SUBPART ZZZZ

WORK PRACTICE STANDARDS

RECORDKEEPING for NESHAP SUBPART ZZZZ

<u>Oil & Filter</u>	<u>Air Cleaner</u>	<u>Hoses & Belts</u>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>
<p>Changed Every: <input type="checkbox"/> 500 hrs <input type="checkbox"/> 1,000 hrs OR <input type="checkbox"/> Annually (if this comes first) Date: _____</p>	<p>Inspect Every 1,000 hrs Date: _____</p>	<p>Inspect Every 500 hrs Date: _____</p>

APPENDIX D

INITIAL NOTIFICATION FOR STATIONARY RECIPROCATING
INTERNAL COMBUSTION ENGINES (RICE)
-Compression Ignition Engines-

INITIAL NOTIFICATION FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

-Compression Ignition Engines-

NESHAP

[40 CFR, Part 63, Subpart ZZZZ](#) [§ 63.6580 - 63.6675]

Instructions

1. Who Must Provide Notification?

On March 3, 2010, the U.S. Environmental Protection Agency (U.S. EPA) finalized a National Emission Standard for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE) located at major or area sources of hazardous air pollutants (HAP) emissions. This standard is referred to as the NESHAP and requires certain RICE to provide notifications to the U.S. EPA. Those notifications are explained below.

The need to file the “*Initial Notification*” associated with the March 3, 2010, NESHAP standard is specific to compression ignition engines. NOTE: This notification form is only for businesses operating compression ignition engines. However, the NESHAP also addresses spark ignition engines at both major and area sources of HAP emissions.

Who Does Notify:

- ✓ Existing compression ignition engines at major and area sources of HAP emissions.
- ✓ New or reconstructed compression ignition engines with a site rating of less than or equal to 500 brake horsepower (HP) at major sources of HAP emissions.

Who Does Not Notify:

- ✓ Existing stationary emergency compression ignition engines with a site rating of more than 500 brake HP located at major sources of HAP emissions.
- ✓ Existing stationary limited use compression ignition engines with a site rating of more than 500 brake HP located at major sources of HAP emissions.
- ✓ Existing stationary compression ignition engines with a site rating of more than 500 brake HP located at major sources of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.
- ✓ Existing stationary residential, commercial, or institutional compression ignition engines located at an area source of HAP emissions.
- ✓ New or reconstructed stationary compression ignition engines located at an area source of HAP emissions subject to and meeting the requirements of 40 CFR part 60 subpart IIII (*New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines*, § 60.4200-60.4219).
- ✓ New or reconstructed stationary compression ignition engines with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis subject to and meeting the requirements of 40 CFR part 60 subpart IIII (*New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines*, § 60.4200-60.4219).
- ✓ New or reconstructed stationary emergency, limited use or non-emergency compression ignition engines with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions subject to and meeting the requirements of 40 CFR part 60 subpart IIII (*New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines*, § 60.4200-60.4219).

2. Definitions

Area source – any stationary source that has the potential to emit less than 10 tons per year of a single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAPs.

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

Compression ignition engine – relating to a type of stationary internal combustion engine that is not a spark ignition engine. A spark ignition engine is a gasoline-fueled engine; or any other type of engine a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Emergency stationary RICE – means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary RICE used to supply power to an electric grid or that supply non-emergency power as part of a financial arrangement with another entity are not considered to be emergency engines, except as permitted under §63.6640(f). All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

A **commercial emergency stationary RICE** means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

An **institutional emergency stationary RICE** means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

A **residential emergency stationary RICE** means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Existing source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before December 19, 2002.

Existing source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Existing source – an area source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Limited use – refers to any stationary RICE that operates less than 100 hours per year.

Major source – any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, 10 tons per year (tpy) or more of any single HAP, or 25 tpy or more of any combination of HAPs.

New source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after December 19, 2002.

New source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after June 12, 2006.

Reconstructed Source - a source whose modifications, i.e., the fixed capital costs associated with the changes to the stationary compression ignition RICE exceeded 50 percent of the fixed capital cost that would be required to construct a comparable new engine:

- For a major source of HAP emissions with a site rating of more than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after December 19, 2002.
- For a major source of HAP emissions with a site rating of equal to or less than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.
- For an area source of HAP emissions that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.

3. When Must the Notification Forms Be Submitted?

Existing sources were supposed to submit their Initial Notification by August 31, 2010. If the Initial Notification deadline was missed, the form should still be submitted.

The deadline for **new/reconstructed sources** to submit the initial notification was August 31, 2010, or 120 days after the source becomes subject to the rule.

4. Where Do I Send The Completed Form?

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address, and mail one copy to your local DEQ District Office (refer to map on page 6):

U.S. EPA Region 5,
Compliance Tracker (AE-17J)
77 West Jackson Blvd.
Chicago, IL 60604

PART B – COMPLIANCE CERTIFICATION

B.1 Compliance Certification Statement

I certify the truth and accuracy and completeness of this notification and (*Please check one of the following three statements*):

- (a) Yes, I am subject to Subpart ZZZZ, and considered an existing source and will be in compliance with the relevant requirements by May 3, 2013.
- (b) Yes, I am subject to Subpart ZZZZ, and considered a new source and will be/am compliant upon startup.
- (c) Yes, I am subject to Subpart ZZZZ, and considered a new source that is not operating in compliance with Subpart ZZZZ. The following is an explanation of the noncompliance and details of the corrective actions being taken to achieve compliance.

Certifying Official: Owner Operator (check one)

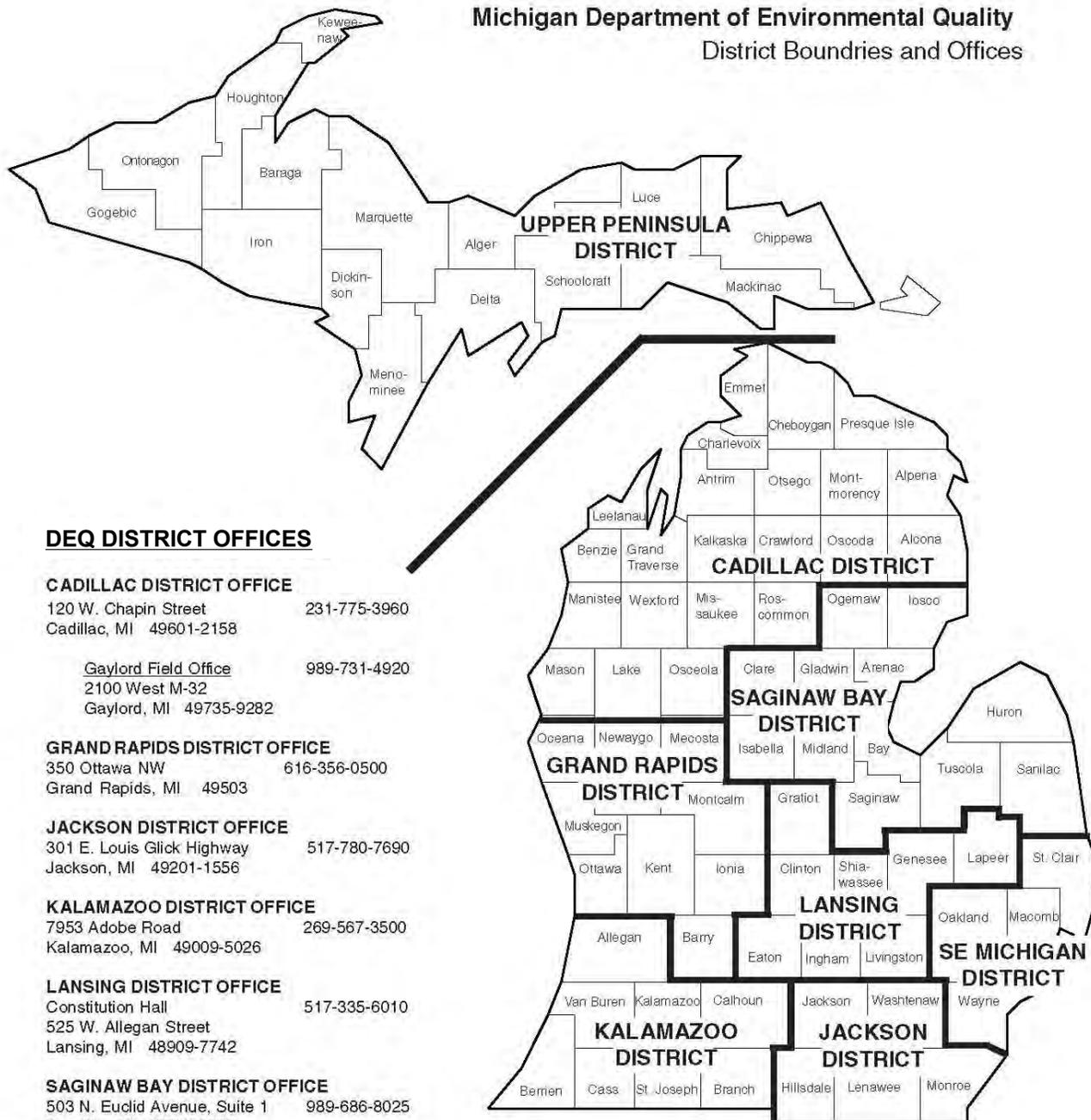
Name of Certifying Official (print or type) Title

Signature of Certifying Official Date

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address. Mail one copy to your local DEQ District Office (refer to map on page 6):

U.S. EPA Region 5,
Compliance Tracker (AE-17J)
77 West Jackson Blvd.
Chicago, IL 60604

**Michigan Department of Environmental Quality
District Boundries and Offices**



DEQ DISTRICT OFFICES

CADILLAC DISTRICT OFFICE

120 W. Chapin Street 231-775-3960
Cadillac, MI 49601-2158

Gaylord Field Office 989-731-4920
2100 West M-32
Gaylord, MI 49735-9282

GRAND RAPIDS DISTRICT OFFICE

350 Ottawa NW 616-356-0500
Grand Rapids, MI 49503

JACKSON DISTRICT OFFICE

301 E. Louis Glick Highway 517-780-7690
Jackson, MI 49201-1556

KALAMAZOO DISTRICT OFFICE

7953 Adobe Road 269-567-3500
Kalamazoo, MI 49009-5026

LANSING DISTRICT OFFICE

Constitution Hall 517-335-6010
525 W. Allegan Street
Lansing, MI 48909-7742

SAGINAW BAY DISTRICT OFFICE

503 N. Euclid Avenue, Suite 1 989-686-8025
Bay City, MI 48706-2925

SOUTHEAST MICHIGAN DISTRICT OFFICE

27700 Donald Court 586-753-3700
Warren, MI 48092-2793

Detroit Field Office 313-456-4700
Cadillac Place
3058 West Grand Boulevard, Suite 2-300
Detroit, MI 48202-6058

UPPER PENINSULA DISTRICT OFFICE

420 5th Street 906-346-8300
Gwinn, MI 49841

ENVIRONMENTAL ASSISTANCE CENTER

(for general information):
Telephone: 800-662-9278
Fax: 517-241-0673

POLLUTION EMERGENCIES

Telephone: 800-292-4706

DEQ WEB PAGE

www.michigan.gov/deq

APPENDIX E

NOTIFICATION OF COMPLIANCE STATUS FOR STATIONARY
RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)
-Compression Ignition Engines-

NOTIFICATION OF COMPLIANCE STATUS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE) -Compression Ignition Engines-

NESHAP
40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 - 63.6675]

Instructions

1. Who Must Provide Notification?

On March 3, 2010, the U.S. Environmental Protection Agency (U.S. EPA) finalized a National Emission Standard for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE) located at major or area sources of hazardous air pollutants (HAP) emissions. This standard is referred to as the NESHAP and requires certain RICE to provide notifications to the U.S. EPA. Those notifications are explained below.

The need to file the “Notification of Compliance Status” associated with the March 3, 2010, NESHAP standard is specific to compression ignition engines. NOTE: This notification form is only for businesses operating compression ignition engines. However, the NESHAP also addresses spark ignition engines at both major and minor sources. Please refer to the Michigan Department of Environmental Quality (DEQ) “Compression Ignition Engines: NESHAP Subpart ZZZZ” guidance publication located at www.michigan.gov/environmentalassistance. Select “Clean Air Assistance” under “Related Links” and then select “RICE” under “Federal Regulations” to understand if you need to provide the notification of compliance status.

2. Definitions

Area source – any stationary source that has the potential to emit less than 10 tons per year of a single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAPs.

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

Compression ignition engine – relating to a type of stationary internal combustion engine that is not a spark ignition engine. A spark ignition engine is a gasoline-fueled engine; or any other type of engine a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Emergency stationary RICE – means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary RICE used to supply power to an electric grid or that supply non-emergency power as part of a financial arrangement with another entity are not considered to be emergency engines, except as permitted under §63.6640(f). All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), it is not considered to be an emergency stationary RICE under this subpart.

A **commercial emergency stationary RICE** means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

An **institutional emergency stationary RICE** means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

A **residential emergency stationary RICE** means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Existing source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before December 19, 2002.

Existing source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Existing source – an area source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Limited use – refers to any stationary RICE that operates less than 100 hours per year.

Major source – any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, 10 tons per year (tpy) or more of any single HAP, or 25 tpy or more of any combination of HAPs.

New source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after December 19, 2002.

New source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after June 12, 2006.

Reconstructed Source - a source whose modifications, i.e., the fixed capital costs associated with the changes to the stationary compression ignition RICE exceeded 50 percent of the fixed capital cost that would be required to construct a comparable new engine:

- For a major source of HAP emissions with a site rating of more than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after December 19, 2002.
- For a major source of HAP emissions with a site rating of equal to or less than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.
- For an area source of HAP emissions that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.

3. When Must the Notification Forms Be Submitted?

Existing sources are required to submit their Notification of Compliance Status by March 3, 2013.

The deadline for **new/reconstructed sources** to submit notification is 120 days after the source installs or constructs the stationary CI RICE.

4. Where Do I Send The Completed Form?

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address. Mail one copy to your local DEQ District Office (refer to map on page 6):

U.S. EPA Region 5,
Compliance Tracker (AE-17J)
77 West Jackson Blvd.
Chicago, IL 60604

NOTIFICATION OF COMPLIANCE STATUS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

-Compression Ignition Engines-

NESHAP

[40 CFR, Part 63, Subpart ZZZZ](#) [§ 63.6580 - 63.6675]

Please review the Instructions before completing this form. Please print or type all information.

Source Type (please check one) Major source of HAPS (attach emissions data generated for notification)
 Area source of HAPS

PART A – FACILITY INFORMATION

Company Information

Company Name: _____ Telephone Number: _____
 Mailing Address: _____ Fax Number: _____
 City: _____ State: _____ Zip: _____

Owner/Operator Information

Name and Title: _____ Telephone Number: _____
 Mailing Address: _____ E-mail: _____
 City: _____ State: _____ Zip: _____

Please check whether the person listed above is owner or operator of the Facility: Owner Operator

Facility Location Information (If different from Company Information)

Company Name: _____
 Street Address: _____ County: _____
 City: _____ State: _____ Zip: _____

Compression Ignition (CI) RICE Information

(Refer to Instructions for definitions)

Identify the CI engines located at the above location.

Source Type	Site Rating <i>(brake HP)</i>	Fuels Combusted	Engine Type	
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use

PART B – METHODS

B.1 Describe the Methods Used to Determine Compliance

PART C – RESULTS

C.1 Describe the Results of Any Performance Tests, Opacity or Visible Emission Observations, Continuous Monitoring System (CMS) performance evaluations, and/or other Monitoring Procedures or Methods that were

Facility can attach test reports and output results from a continuous emissions monitoring system (CEMS) and/or CPMS to this notification.

Example Response:

CI RICE ID #	Location	Test Date	HAP Reduction (%)	HAP Concentration	Catalyst Inlet Temperature	Catalyst Pressure Drop	Startup Time

PART D – CONTINUOUS COMPLIANCE

D.1 Describe the Methods you will use to Determine Continuous Compliance, Including a Description of Monitoring and Reporting Requirements and Test Methods

PART E – EMISSIONS

E.1 Describe the Type and Quantity of Hazardous Air Pollutants (HAPs) emitted by the source, Reported in units and averaging times and in accordance with the test methods specified in the relevant standard.

CI RICE ID #	Location	Description	HAP Emitted	HAP Emitted (tons)	Period of Time Emitted

PART F – CONTROLS

F.1 Describe the air pollution control equipment or method for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency (percent) for each control device or method.

CI RICE ID #	Location	Equipment Type	Control Device	Control Efficiency	HAP Controlled

PART G – CONSTRUCTION/RECONSTRUCTION

G.1 Did you submit an application for construction or reconstruction that contained preliminary or estimated data? Yes No

G.2. If you answered yes, provide actual emission data or other corrected information below:

PART H – COMPLIANCE CERTIFICATION

H.1 Compliance Certification Statement

I certify the truth and accuracy and completeness of this notification and (*Please check one of the following three statements*):

- (a) Yes, I am subject to Subpart ZZZZ, and considered an existing source in compliance with the relevant requirements by May 3, 2013.
- (b) Yes, I am subject to Subpart ZZZZ, and considered a new source and will be/am compliant upon startup.
- (c) Yes, I am subject to Subpart ZZZZ, and considered a new source that is not operating in compliance with Subpart ZZZZ. The following is an explanation of the noncompliance and details of the corrective actions being taken to achieve compliance.

Certifying Official: Owner Operator (check one)

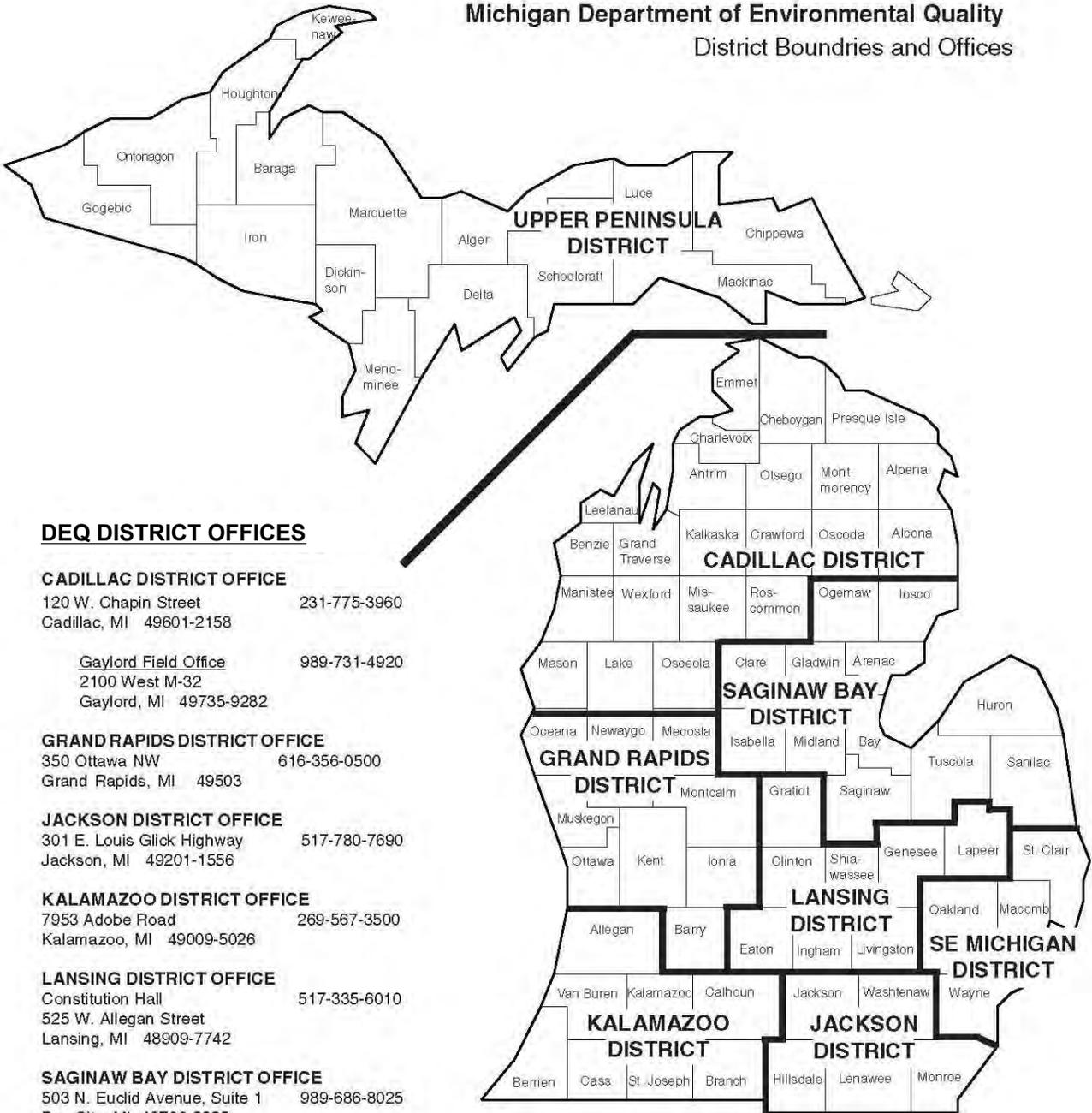
Name of Certifying Official (print or type) Title

Signature of Certifying Official Date

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address. Mail one copy to your local DEQ District Office (refer to map on page 6):

U.S. EPA Region 5,
Compliance Tracker (AE-17J)
77 West Jackson Blvd.
Chicago, IL 60604

**Michigan Department of Environmental Quality
District Boundries and Offices**



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120 W. Chapin Street 231-775-3960
Cadillac, MI 49601-2158

Gaylord Field Office 989-731-4920
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Gaylord, MI 49735-9282

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Jackson, MI 49201-1556

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Lansing, MI 48909-7742

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Cadillac Place
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Detroit, MI 48202-6058

UPPER PENINSULA DISTRICT OFFICE

420 5th Street 906-346-8300
Gwinn, MI 49841

ENVIRONMENTAL ASSISTANCE CENTER

(for general information):

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Fax: 517-241-0673

POLLUTION EMERGENCIES

Telephone: 800-292-4706

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APPENDIX F

NOTIFICATION OF PERFORMANCE TESTING FOR STATIONARY
RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)
-Compression Ignition Engines-

NOTIFICATION OF PERFORMANCE TESTING FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE) -Compression Ignition Engines-

NESHAP
40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 - 63.6675]

Instructions

1. Who Must Provide Notification?

On March 3, 2010, the U.S. Environmental Protection Agency (U.S. EPA) finalized a National Emission Standard for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE). This standard is referred to as the NESHAP and requires certain RICE to provide notifications to the U.S. EPA. Those notifications are explained below.

The need to file the “Notification of Performance Testing” associated with the March 3, 2010, NESHAP standard is specific to compression ignition (CI) engines [§ 63.6600, 63.6602, 63.6603, 63.6620, Tables 3 & 4].

NOTE: This notification form is only for businesses operating CI engines. However, the NESHAP also addresses spark ignition engines at both major and area sources. Please refer to the Michigan Department of Environmental Quality (DEQ) “Compression Ignition Engines: NESHAP Subpart ZZZZ” guidance publication located at www.michigan.gov/deqenvassistance, and select “Clean Air Assistance” under “Related Links” and then select “RICE” under “Federal Regulation” to understand if you are required to provide a notification of performance testing per § 63.6600, 63.6602, 63.6603, and 63.6620, Tables 3 & 4.

2. Definitions

Area source – any stationary source that has the potential to emit less than 10 tons per year of a single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAPs.

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

Compression ignition engine – relating to a type of stationary internal combustion engine that is not a spark ignition engine. A spark ignition engine is a gasoline-fueled engine; or any other type of engine a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for chlorine and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Emergency stationary RICE – means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary RICE used to supply power to an electric grid or that supply non-emergency power as part of a financial arrangement with another entity are not considered to be emergency engines, except as permitted under §63.6640(f). All emergency stationary RICE must comply with the requirements specified in §63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in §63.6640(f), it is not considered to be an emergency stationary RICE under this subpart.

*A **commercial emergency stationary RICE** means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.*

An **institutional emergency stationary RICE** means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

A **residential emergency stationary RICE** means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Existing source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before December 19, 2002.

Existing source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Existing source – an area source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE before June 12, 2006.

Limited use – refers to any stationary RICE that operates less than 100 hours per year.

Major source – any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, 10 tons per year (tpy) or more of any single HAP, or 25 tpy or more of any combination of HAPs.

New source (>500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after December 19, 2002.

New source (≤500 HP site rating) – a major source of HAP emissions with a stationary RICE that commenced construction or reconstruction of the stationary RICE after June 12, 2006.

Reconstructed Source - a source whose modifications, i.e., the fixed capital costs associated with the changes to the stationary compression ignition RICE exceeded 50 percent of the fixed capital cost that would be required to construct a comparable new engine:

- For a major source of HAP emissions with a site rating of more than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after December 19, 2002.
- For a major source of HAP emissions with a site rating of equal to or less than 500 brake horsepower (HP) that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.
- For an area source of HAP emissions that commenced construction or reconstruction of the stationary RICE on or after June 12, 2006.

3. How Do I Complete the Notification of Performance Testing Form?

The “**Facility Information**” section of the form must be completed by all businesses with stationary CI engines required to submit a notification.

Part A – Date of Schedule Performance Test(s). Identify the engine (i.e., serial number), whether it is an existing or new/reconstructed engine, engine’s site rating, and date of installation on the form. Check the boxes corresponding to the test procedures you will be performing on your tank(s). See table below for the tests that are required. Identify the date the performance tests will be conducted.

The purpose of the notification is to give the U.S. EPA the opportunity to review and approve the site-specific test plan as required under Title 40, Part 63, Subpart A, Section 63.7(c) of the Code of Federal Regulations (40 CFR 63). The test plan shall include a test program summary, the test schedule, data quality objectives, and both an internal and external quality assurance (QA) program.

Part B – Compliance Certification must be completed by all businesses required to submit a notification.

3. When Must the Notification Forms Be Submitted?

For **new sources**, the performance tests must be conducted upon startup of the engine. For **existing sources**, the performance tests must be conducted by March 3, 2013. The Notification of Performance Testing must be submitted at least 60 days before the day of the performance test.

4. Where Do I Send The Completed Form?

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address, and mail one copy to your local DEQ District Office (refer to map on page 6):

U.S. EPA Region 5,
Compliance Tracker (AE-17J)
77 West Jackson Blvd.
Chicago, IL 60604

NOTIFICATION OF PERFORMACNE TESTING FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

-Compression Ignition Engines-

NESHAP
40 CFR, Part 63, Subpart ZZZZ [§ 63.6580 - 63.6675]

Please review the Instructions before completing this form. Please print or type all information.

Source Type (please check one) Major source of HAPS (attach emissions data generated for notification)
 Area source of HAPS

PART A – FACILITY INFORMATION

Company Information

Company Name: _____ Telephone _____
 Mailing Address: _____ Number: _____
 _____ Fax Number: _____
 City: _____ State: _____ Zip: _____

Owner/Operator Information

Name and Title: _____ Telephone _____
 Mailing Address: _____ Number: _____
 _____ E-mail: _____
 City: _____ State: _____ Zip: _____

Please check whether the person listed above is owner or operator of the Facility: Owner Operator

Facility Location Information (If different from Company Information)

Company Name: _____
 Street Address: _____ County: _____
 City: _____ State: _____ Zip: _____

Compression Ignition (CI) RICE Information

(Refer to Instructions for definitions)

Identify the CI engines located at the above location.

Source Type	Site Rating (brake HP)	Fuels Combusted	Engine Type	
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use
<input type="checkbox"/> New <input type="checkbox"/> Existing			<input type="checkbox"/> Non-Emergency <input type="checkbox"/> Emergency	<input type="checkbox"/> Emergency –Residential, Commercial, Institutional <input type="checkbox"/> Limited Use

PART B – Performance Tests

B.1 Describe Any Performance Tests that you are required to do for each stationary CI engine at the location above.

Please refer to § 63.6600, §63.6602, §63.6603, §63.6620 and Tables 3 and 4 for more information on the required test for your specific CI engine.

Example Information:

CI RICE ID #	Location	Test Date (future)	Equipment/Method to be used	Other

PART C – COMPLIANCE CERTIFICATION

H.1 Compliance Certification Statement

I certify the truth and accuracy and completeness of this notification and (*Please check one of the following three statements*):

- (a) Yes, I am subject to Subpart ZZZZ, and considered an existing source in compliance with the relevant requirements by May 3, 2013.
- (b) Yes, I am subject to Subpart ZZZZ, and considered a new source and will be/am compliant upon startup.
- (c) Yes, I am subject to Subpart ZZZZ, and considered a new source that is not operating in compliance with Subpart ZZZZ. The following is an explanation of the noncompliance and details of the corrective actions being taken to achieve compliance.

Certifying Official: Owner Operator (check one)

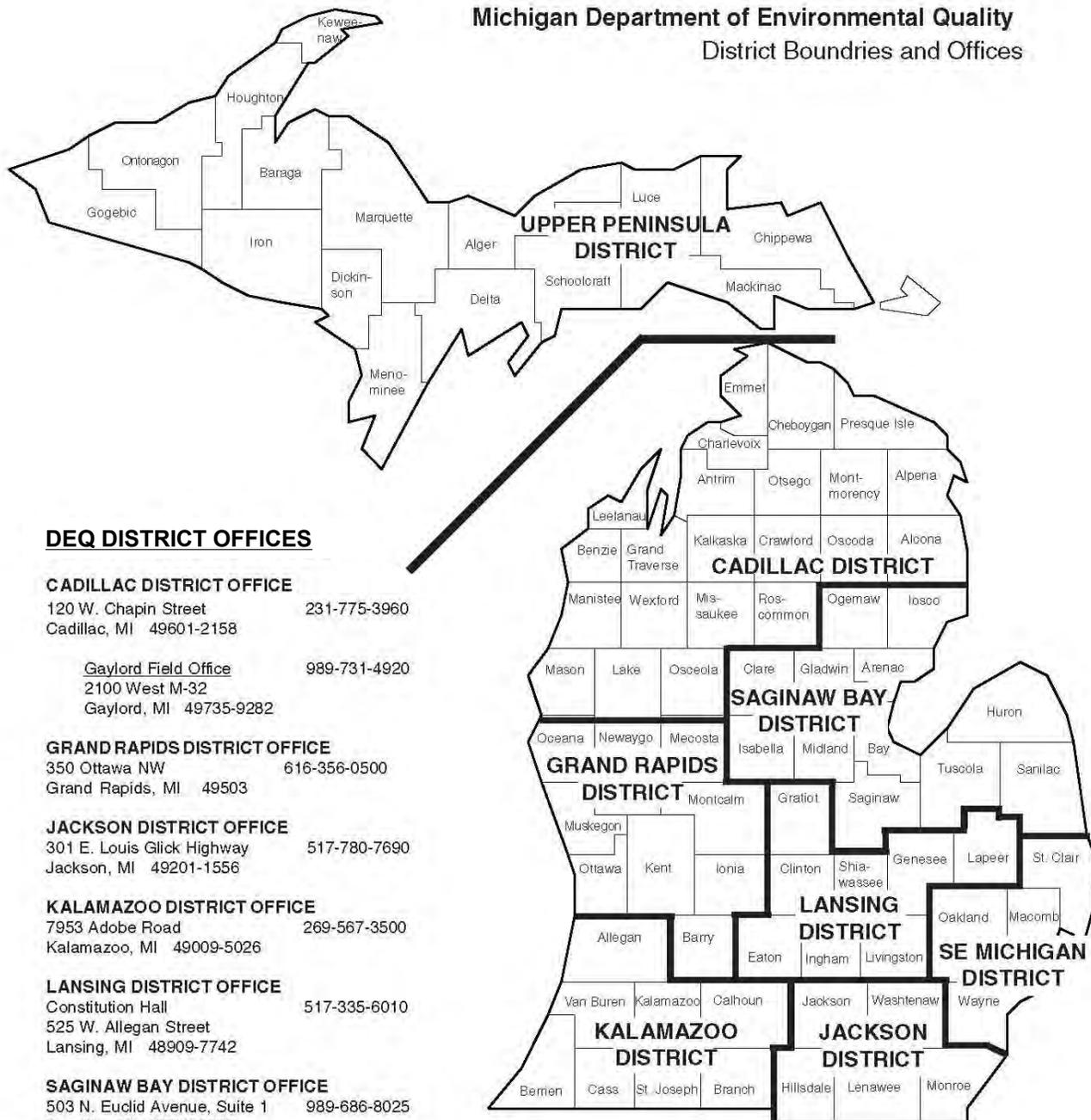
Name of Certifying Official (print or type) Title

Signature of Certifying Official Date

Please make copies of this form and submit the original signed copy by U.S. mail, or by another courier, to the **U.S. EPA Region 5 Office** at the following address. Mail one copy to your local DEQ District Office (refer to map on page 6):

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Jackson, MI 49201-1556

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Bay City, MI 48706-2925

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Warren, MI 48092-2793

Detroit Field Office 313-456-4700
Cadillac Place
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Detroit, MI 48202-6058

UPPER PENINSULA DISTRICT OFFICE

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Gwinn, MI 49841

ENVIRONMENTAL ASSISTANCE CENTER

(for general information):

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Fax: 517-241-0673

POLLUTION EMERGENCIES

Telephone: 800-292-4706

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APPENDIX G

**NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR
STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES**

NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

[40 CFR PART 60 SUBPART IIII](#)

[§ 60.4200 - 60.4219]

SUMMARY

The United States Environmental Protection Agency (U.S. EPA) New Source Performance Standard (NSPS) Subpart IIII establishes requirements for compression ignition (CI) engines based on the size, type and manufacture date of the engine. This standard will limit the emissions of criteria pollutants, such as nitrogen oxides (NO_x), particulate matter (PM), carbon monoxide (CO), and non-methane hydrocarbons (NMHC); and will limit the sulfur in the diesel fuel used to run the stationary diesel compression ignition internal combustion engines (CI ICE).

If you are subject to and in compliance with Subpart IIII, then your requirements under Subpart ZZZZ may be minimal, i.e. submit an initial notification, or they may be exempt. For more information about Subpart ZZZZ please refer to the Michigan Department of Environmental Quality (DEQ) guidance document located at www.michigan.gov/environmentalassistance, and select "Clean Air Assistance" under "Related Links" and then select "RICE" under "Federal Regulations."

The Subpart IIII can be found in the Federal Register notice published July 11, 2006, with proposed amendments published on June 8, 2010. The NSPS can be found at <http://www.epa.gov/ttn/atw/nsps/cinsps/fr11jy06.pdf>. The notice is published in Title 40, Part 60, 85, et al. Subpart IIII of the Code of Federal Regulations.

The owners and operators of CI ICE are subject to Subpart IIII, if construction commenced (date the engine is ordered by the owner or operator) after July 11, 2005, and the engine is manufactured on or after April 1, 2006, and is not a fire pump; or a modification (a change to any engine that causes an increase in the ability to emit any pollutant regulated under this subpart) or reconstruction (an existing source such that the cost of the new components is greater than 50% of the cost of a comparable new unit) occurred after July 11, 2005; or manufactured as a certified National Fire Protection Association fire pump engine on or before July 1, 2006.

The manufacturers of CI ICE are subject to Subpart IIII, with 2007 and later model year engines with a displacement of less than 30 liters per cylinder and certain model year fire pump engines; and engines manufactured on or after April 1, 2006, that are not fire pump engines, and engines manufactured on or after July 1, 2006, that are fire pump engines are treated as if they were constructed prior to July 11, 2005.

The Subpart IIII does not apply to stationary CI ICE being tested at a stationary CI ICE test cell/stand, and owners/operators and manufacturers may be eligible to request an exemption for reasons associated with national security.

This standard was phased into effect in three, increasingly stringent stages:

1. The first was a transition period to control emissions from diesel engines built after this rule was proposed, but before the 2007 model year. Owners/operators complied with this regulation by purchasing an appropriate engine and by operating and maintaining the engine according to manufacturer's instructions.
2. Beginning in the model year 2007, engine manufactures were required to certify that all new, modified or reconstructed stationary diesel engines meet the stringent emissions levels for NO_x, PM, CO, and HC that are required for the same size engine and model year for nonroad diesel engines in the categories known as Tiers 1 through 4, with minor exceptions. Also, stationary emergency diesel engines would be required to be certified to meet emissions limits through Tier 3 and Tier 4; however, Tier 4 requirements do not require add-on controls.
3. Beginning with 2011 model year engines, add-on controls will be required to achieve the emission limits for non-emergency engines.

By 2015, U.S. EPA estimates that 81,500 new stationary diesel engines will be subject to the NSPS Subpart IIII.