



C Air Currents

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EPA Implements New Rules for Stationary Diesel Generators

Operators of diesel-fired emergency generators and other stationary diesel-powered engines face new requirements for safe, legal operation of those devices.

The U.S. Environmental Protection Agency (EPA) is in the process of implementing updated federal rules for stationary reciprocating internal combustion engines (RICE). ORCAA believes the first step toward enforcement is education. As such, ORCAA staff compiled a list of the basic requirements of the new RICE rules.



Federal RICE regulations differ depending on location (at area source or major source of hazardous air pollutants (HAPs), type (spark ignition or compression ignition), emergency or non-emergency and construction date. For diesel emergency generators that commenced construction before July 11, 2005, at area sources are subject to 40 CFR 63 Subpart ZZZZ. EPA requires that the source be in full compliance with the following beginning May 3, 2013:

1. Installation of a non-resettable hour meter;
2. Operation and maintenance per manufacturer's emission-related written instruction or have your own operations and maintenance plan;
3. Annual limit of 100 hours for maintenance and readiness checks;
4. Time spent at startup and shutdown must not exceed 30 minutes;
5. Record keeping requirements; and,
6. At a minimum, annual maintenance (see attached chart for service requirements).

The operator shall conduct the following maintenance:

Maintenance	Frequency
Change oil and filter ¹	Every 500 hours of operation or annually, whichever comes first
Inspect air cleaner, and replace as necessary	Every 1,000 hours of operation or annually, whichever comes first
Inspect all hoses and belts; replace as necessary	Every 500 hours of operation or annually, whichever comes first

¹ The operator has the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement. If the emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the maintenance required, the maintenance can be delayed if the requirements in 40 CFR Part 63 Subpart ZZZZ Table 2d are met.

Engines located at major sources of hazardous air pollutants (HAPs), engines that are non-emergency units, or engines that commenced construction after July 11, 2005, have different requirements. Please visit the listed online resources or call ORCAA for more information.

ORCAA's Stationary RICE Fact Sheet

What is RICE?

Reciprocating Internal Combustion Engines

Stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and is not mobile. There are two basic types of stationary reciprocating engines - spark ignition (SI) and compression ignition (CI).

- SI engines use a spark (across a spark plug) to ignite a compressed fuel-air mixture. Typical fuels for such engines are gasoline and natural gas.
- CI engines compress air to a high pressure, heating the air to the ignition temperature of the fuel, which then is injected. The high compression ratio used for compression ignition engines results in a higher efficiency than is possible with spark ignition engines. Diesel fuel oil is normally used in compression ignition engines, although some are dual-fueled. CI RICE engines are most common in this region.

Why regulate RICE?

Collectively, the RICE units within a community may have a significant impact on air quality and public health.

RICE engines emit the conventional air pollutants created when fuel is burned including carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (PM). The health effects of these pollutants include a range of respiratory (breathing) issues, especially asthma among children and seniors.

RICE engines may also emit formaldehyde, acrolein, acetaldehyde and methanol. Exposure to these air toxics may produce a wide variety of health difficulties for people including irritation of the eyes, skin and mucous membranes, and the central nervous system.

Federal Air Regulations for Stationary RICE

Manufacturers and owners of stationary reciprocating internal combustion engines (RICE) are affected by federal air pollution regulations promulgated in stages starting in 2004. These include standards, called New Source Performance Standards (NSPS) for both stationary spark and compression (diesel) ignition engines. Specifically they are:

- Standards of Performance for Stationary

Spark Ignition Internal Combustion Engines (40 CFR 60 Subpart JJJJ),

- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60 Subpart IIII)
- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE) (40 CFR 63 Subpart ZZZZ)

For additional information about these regulations, please refer to these resources:

Joint Environmental Compliance Combustion Information Portal:

<http://www.combustionportal.org/rice.cfm>

EPA Region 10 RICE Regulation Assistance Page:

http://yosemite.epa.gov/R10/airpage.nsf/Enforcement/rice_rules

EPA Region 10 RICE Regulation Navigation Tool:

<http://www.epa.gov/ttn/atw/rice/output/quiz.html>

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