



# Connecticut Department of Energy and Environmental Protection



# National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE Rule)



**40 CFR 63 Subpart ZZZZ**  
**Area Source Existing Emergency Compression Ignition Engine**  
**≤500 Horsepower**



Connecticut Department of Energy and Environmental Protection

# To comply with this rule, you must meet the following standards:

Every 500 hours of operation or annually, whichever comes first, you must:

- Change oil and filter

- Can utilize oil analysis program to extend specified oil change requirement

- Oil analysis must be performed at the same frequency specified above.

- Analysis program must at a minimum analyze: Total Base Number, viscosity, and percent water content.

- Condemning limits for these parameters are: Total Base Number is <30% of the Total Base Number of the oil when new; viscosity of the oil has changed by >20% from the viscosity of the oil when new; or percent water content (by volume) is >0.5.

- If all condemning limits are not exceeded you are not required to change the oil.

- If any limits are exceeded, change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results are received, change the oil within 2 days or before commencing operation, whichever is later.

- Keep records of the parameters analyzed, the results, and the oil changes.

- Analysis program must be part of the engine maintenance plan.

- Inspect all hoses and belts and replace as necessary



# To comply with this rule, you must meet the following standards:

Every 1,000 hours of operation or annually, whichever comes first, you must:

- Inspect air cleaner and replace as necessary

At all times you must operate/maintain all equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions.



# To comply with this rule, you must meet the following standards:

- If you operate for local reliability criteria:

- You will be required to use ultra low sulfur diesel (ULSD)

- Engines located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, areas of Alaska that are not accessible by the Federal Aid Highway System, remote areas of Alaska, or on offshore vessels (that meet 63.6603(c)) are exempt from the requirements of this section.

- You need to collect and submit an annual report including location, dates and times of operation (only if  $\geq 100$  HP).

- First report must cover calendar year 2015 and is due March 31, 2016.
    - Submit electronically using the form in the Compliance and Emissions Data Reporting Interface that is accessed through EPA's Central Data Exchange at [www.epa.gov/cdx](http://www.epa.gov/cdx).



# Monitoring Requirements



Photo credit: EPA

- Operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
- Install a non-resettable hour meter if one is not already installed.
- Minimize the engine's time spent at idle during startup and minimize startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.



# Continuous Compliance Requirements

- No limit on hours of operation for emergency service (i.e. hurricane or ice storm)
    - Do not operate the engine for more than 30 minutes before the emergency condition is expected to occur; terminate engine operation immediately upon notification that the emergency condition is no longer imminent.
  - 100 hours/year allowed for maintenance and testing
  - 50 hours/year allowed for non-emergencies (counts as part of the 100 hour/year maintenance and testing limit)
    - Cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement unless all of the following conditions are met:
      - Engine is dispatched by the local balancing authority or local transmission and distribution system operator
      - Dispatch is intended to mitigate local transmissions and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region
      - Dispatch follows reliability, emergency operation or similar protocols that follow specified North American Electric Reliability Corporation (NERC), regional, state, public utility commission or local standards or guidelines
      - Power is provided only to the facility itself or to support the local transmission and distribution system
      - Owner/operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner/operator.
- Note: If operation in response to a deviation of voltage from the electricity supplier to the premises does not qualify as emergency operation under the rule, the unit may operate for up to 50 hours/year as part of the non-emergency operation allowance as long as the engine is not used for peak shaving or as part of a financial arrangement with another entity. Contact EPA if you have any questions. The following are examples of when a voltage deviation might be considered an emergency:
- Voltage deviation at a hospital which disrupts normal operations
  - Deviation in power to a 911 call center
  - Power disruption at a shopping mall which affects lighting and prevents shoppers from exiting the building safely
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet all non-emergency engine requirements.
  - Engines located in Connecticut must also meet State requirements for emergency engines.



# CT Emergency Engine Requirements

According to Sec. 22a-174-22(a)(3) of the RCSA, “emergency engine” means a stationary reciprocating engine or a turbine engine which:

- Provides mechanical/electrical power only during periods of
  - testing and scheduled maintenance or
  - during an emergency or
  - in accordance with a contract ensuring electricity for use within the state of CT during an OP-4, Step 6 event
- Does not include an engine for which the owner/operator is party to any other agreement to sell electrical power from such engine to an electricity supplier, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

**Note:** Engines operating under RCSA Sections 22a-174-3b and 3c must comply with additional requirements



# Federal and CT Emergency Engine Requirements

Federal Only	Common to Both	State Only
<ul style="list-style-type: none"> <li>•100 hr/yr limit:                             <ul style="list-style-type: none"> <li>-Testing and maintenance checks</li> <li>-Readiness testing</li> </ul> </li>   <li>•50 hr/yr of the 100 hr/yr limit:                             <ul style="list-style-type: none"> <li>-Non-emergencies with no financial arrangement</li> <li>-Local reliability criteria as described in the rule</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>•Emergency hrs of operation: no limit (unless subject to 22a-174-3b or 3c)</li> </ul>	<ul style="list-style-type: none"> <li>•Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event</li>   <li>•Engine cannot be used as part of any other agreement or financial arrangement with another entity</li>   <li><b>If operating under RCSA Sec. 22a-174-3b:</b> <ul style="list-style-type: none"> <li>•Emergency hrs of operation: 300 hr/yr limit</li> <li>•Any nongaseous fuel consumed by engine shall not exceed sulfur content of 0.0015%, dry basis</li> </ul> </li>   <li><b>If operating under RCSA Sec. 22a-174-3c:</b> <ul style="list-style-type: none"> <li>No restriction on hrs of use or fuel sulfur content, however total facility purchases of fuel are extremely limited</li> </ul> </li> </ul>



# To demonstrate compliance with all rule requirements, keep records of:

- The maintenance conducted on the engine in order to demonstrate that you operated and maintained the engine and after-treatment control device (if any) according to your own maintenance plan.
- If the engine does not meet the standards applicable to non-emergency engines, you must record:
  - Hours of operation using the non-resettable hour meter
  - The number of hours used for emergency operation (including what classified the operation as emergency)
  - The number of hours used for non-emergency operation
  - Time the engine was operated if the engine is used for local reliability.
- Keep records for 5 years from the date of creation.



# By when must I comply with the rule?

Your compliance date:  
**May 3, 2013**



Photo credit: EPA

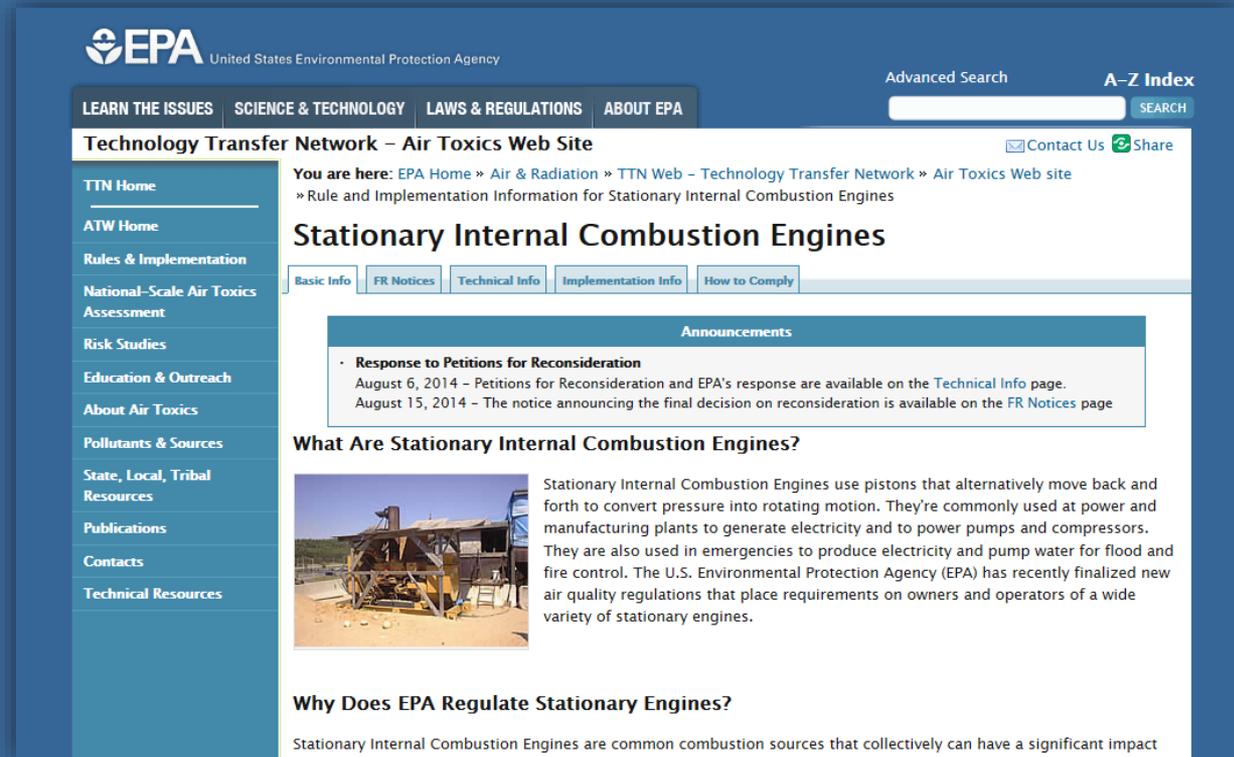


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# Visit the EPA RICE Compliance Page

<http://www.epa.gov/ttn/atw/icengines/>

- ▶ Fact sheets
- ▶ Regulations
- ▶ Example notifications
- ▶ Announcements
- ▶ Q & A documents
- ▶ Testing advice
- ▶ Recorded webinars
- ▶ ...and more!



The screenshot shows the EPA website's navigation and content for Stationary Internal Combustion Engines. The top navigation bar includes 'LEARN THE ISSUES', 'SCIENCE & TECHNOLOGY', 'LAWS & REGULATIONS', and 'ABOUT EPA'. The main content area is titled 'Technology Transfer Network – Air Toxics Web Site' and features a breadcrumb trail: 'You are here: EPA Home » Air & Radiation » TTN Web – Technology Transfer Network » Air Toxics Web site » Rule and Implementation Information for Stationary Internal Combustion Engines'. The main heading is 'Stationary Internal Combustion Engines', with sub-sections for 'Basic Info', 'FR Notices', 'Technical Info', 'Implementation Info', and 'How to Comply'. An 'Announcements' section highlights a 'Response to Petitions for Reconsideration' from August 6, 2014, and August 15, 2014. Below this, a section titled 'What Are Stationary Internal Combustion Engines?' includes a photograph of a large industrial engine and a descriptive paragraph. A final section, 'Why Does EPA Regulate Stationary Engines?', states that these engines are common combustion sources with a significant impact.



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# Take Aways

## Engine Type:

- An existing emergency compression ignition engine at an area source with a site rating less than or equal to 500 horsepower

## Standards:

- Change oil/filter (can use oil analysis program), inspect hoses and belts and replace as necessary every 500 hours or annually
- Inspect air cleaner every 1,000 hours or annually and replace as necessary

## Monitoring:

- Operate/maintain engine according to manufacturer's instructions or develop your own maintenance plan
- Install a non-resettable hour meter



# Take Aways

## Compliance Requirements:

- Emergency hours of operation: no limit (unless subject to 22a-174-3b or 3c)
  - Do not operate the engine for more than 30 minutes before an emergency condition is expected to occur; terminate engine operation immediately upon notification that the emergency condition is no longer imminent.
- 100 hrs/yr for:
  - Maintenance and testing
- 50 hrs/yr for non-emergencies (counts as part of the 100 hrs/yr for maintenance and testing)
  - Cannot be used as part of a financial arrangement
  - Operating for up to 50 hours to head off potential voltage collapse, or line overloads that could result in local or regional power disruption
- If engine operates for local reliability: use ULSD and submit annual report
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet non-emergency engine requirements

## Recordkeeping:

- Record:
  - Maintenance conducted
  - Total hours of operation
  - Hours of emergency operation (including what classified the operation as emergency)
  - Hours of non-emergency operation (if allowed)
  - The time of operation during use for local reliability.
- Retain records for 5 years

## Compliance Date:

- May 3, 2013

