



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 Spark 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 Acid Number, viscosity, and percent water content.

- Condemning limits for these parameters are: Total Acid Number increases by >3.0 mg KOH/g from Total Acid 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 analysis results; if the engine is not in operation when results are received, change 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

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

- Inspect spark plugs

At all times, 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:



Photo credit: EPA

- If you operate for local reliability criteria:

- Submit an annual report including location, dates and times of operation.

- 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.



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Monitoring Requirements

- 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 the 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 vs. CT Emergency Engine Requirements

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



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



- Maintenance conducted to demonstrate that you operated and maintained the engine and after-treatment control device (if any) according to your maintenance plan.
 - Hours of operation using the non-resettable hour meter
 - Number of hours used for emergency operation (including what classified the operation as emergency)
 - Number of hours used for non-emergency operation (if applicable)
 - The time the engine was operated if the engine is used for local reliability.
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- Keep records for 5 years from the date of creation.



By when must I comply with the rule?

Your compliance date:
October 19, 2013



Photo credit: EPA

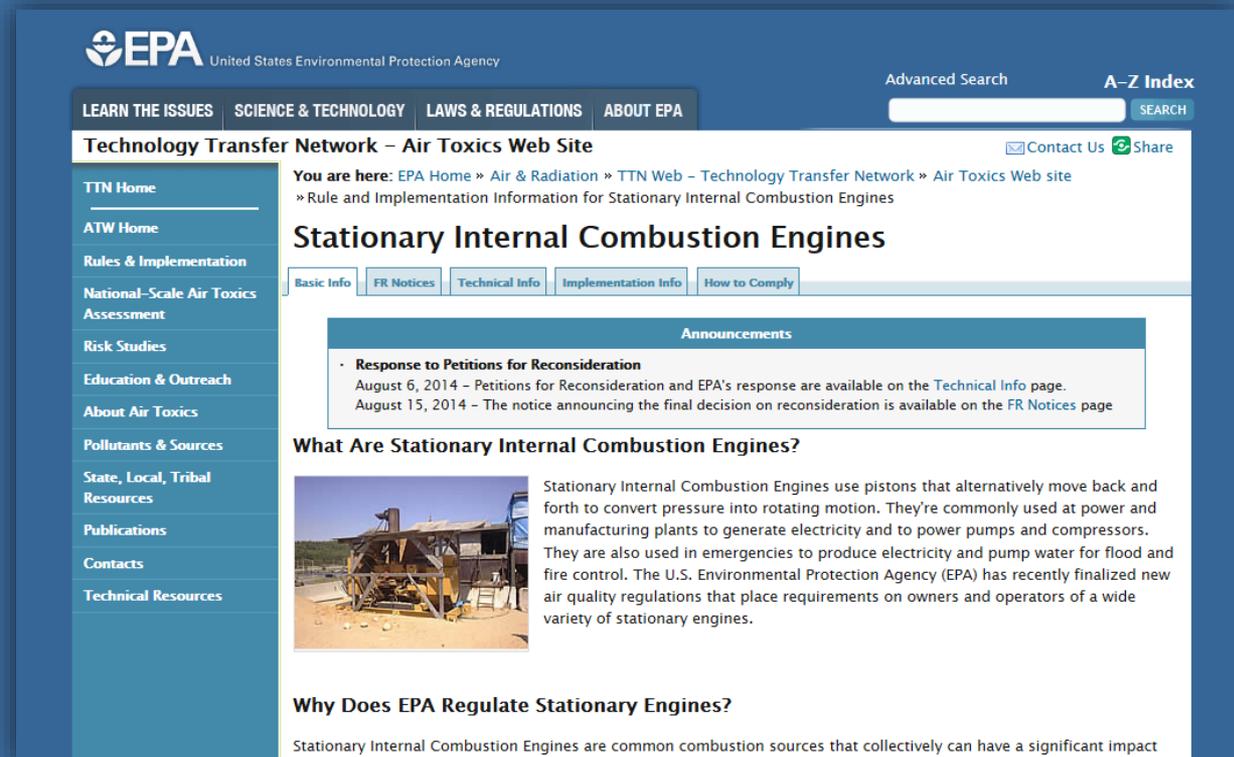


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Visit the EPA RICE Compliance Page

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 Technology Transfer Network (TTN) for Air Toxics Web Site. The page is titled "Stationary Internal Combustion Engines" and includes a navigation menu with options like "Basic Info", "FR Notices", "Technical Info", "Implementation Info", and "How to Comply". A section titled "Announcements" features a "Response to Petitions for Reconsideration" dated August 6, 2014, and August 15, 2014. Below this, there is a section titled "What Are Stationary Internal Combustion Engines?" with a photograph of a large industrial engine and a text description. The text explains that these engines use pistons to convert pressure into rotating motion and are used in power and manufacturing plants. It also mentions that the EPA has recently finalized new air quality regulations for these engines. A final section titled "Why Does EPA Regulate Stationary Engines?" states that these engines are common combustion sources that can have a significant impact.



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Take Aways

Engine Type:

- Existing emergency spark ignition engine at an area source having a site rating greater than 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 spark plugs every 1,000 hours or annually

Monitoring:

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



Take Aways

Compliance Requirements:

- Emergency hours of operation: no limit (unless subject to 22a-174-3b or 3c)
- 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 you operate for local reliability: 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:

- October 19, 2013

