

National Emission Standards for Hazardous Air Pollutants for
Reciprocating Internal Combustion Engines (RICE Rule) Training Module
40 CFR 63 Subpart ZZZZ

Script- Area Source Existing Non-Emergency Spark Ignition 4-Stroke Rich Burn
Engine >500 Horsepower (operates >24 hours)

NARRATOR:

[Slide 2:]

Welcome to the Connecticut Department of Energy & Environmental Protection's Online Training for the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, also known as the RICE Rule!

This tool is designed to help owners and operators of reciprocating internal combustion engines, also known as RICE, determine their requirements under 40 CFR Section 63, subpart ZZZZ. By answering the successive questions, your specific requirements have been estimated. Please note that they may not be complete, and refer any questions to your local authority.

[Slide 3:]

We have determined that your engine is an existing non-emergency spark ignition 4-stroke rich burn engine at an area source with a site rating greater than 500 horsepower which is operated for more than 24 hours per year. Now let's discuss your requirements.

Let's start with engines located in remote areas. Your engine is considered remote if it meets any of the criteria listed here.

[Slide 4:]

Engines located in remote areas, as defined in the rule, must fulfill the requirements listed here.

[Slide 5:]

If your engine is located in a remote area, you must also follow the management practices shown here.

[Slide 6:]

If your engine is not located in a remote area, as defined in the rule, you must:

- Install non-selective catalytic reduction, also referred to as NSCR, or a 3-way catalyst. NSCR means an add-on catalytic nitrogen oxides control device that, in a 2-step reaction, promotes the conversion of excess oxygen, nitrogen oxides, carbon monoxide, and volatile organic compounds into carbon dioxide, nitrogen, and water.
- The estimated capital cost and annual cost of the catalyst can be determined using the equations specified here.
- You must also conduct an initial performance test to show that the average reduction of emissions of carbon monoxide is 75% or more, the average carbon monoxide concentration is less than or equal to 270 parts per million at 15% oxygen, **or** the average reduction of emissions of total hydrocarbon, also known as THC, is 30% or more.
- You must conduct annual checks of the catalyst.

- You must either use a high temperature shutdown device that will detect if the catalyst inlet temperature is too high, **or** install a continuous parameter monitoring system to monitor catalyst inlet temperature continuously and maintain the temperature between 750 and 1,250 degrees Fahrenheit.
- At all times you must operate and maintain all equipment safely and in accordance with good air pollution control practices for minimizing emissions.

[Slide 7:]

Now, let's discuss your initial compliance requirements. In order to demonstrate initial compliance, you must conduct an initial test. This test must consist of three test runs, each run lasting at least 15 minutes. There is an exception for test runs conducted using Appendix A of the rule; they must consist of one measurement cycle as defined by the method and include at least two minutes of test data phase measurement.

During the initial test, you must measure carbon monoxide emissions, THC emissions, and oxygen using appropriate measurement methods specified here. If you plan to demonstrate compliance with the carbon monoxide or THC percent reduction requirement, you must measure carbon monoxide or THC and oxygen emissions simultaneously at both the inlet and outlet of the control device.

[Slide 8-9:]

Please review the tables on the next two screens to determine your testing requirements. They will differ depending on whether you are complying with the requirement to reduce carbon monoxide emissions, the requirement to limit the concentration of carbon monoxide in the engine exhaust, or the requirement to reduce formaldehyde emissions.

[Slide 10:]

Here are your continuous compliance requirements. In order to demonstrate continuous compliance, you must complete checks of the catalyst every year to ensure proper catalyst activity.

- At a minimum, the check must consist of one 15 minute run utilizing the methods discussed earlier, except that test runs carried out using appendix A to the rule must involve one measurement cycle and include at least two minutes of test data phase measurement.
- Carbon monoxide, THC, and oxygen must be measured.
- Carbon monoxide or THC emissions and oxygen emissions must be recorded simultaneously at the inlet and outlet of the control device if you are demonstrating compliance with the carbon monoxide or THC percent reduction requirement.
- The catalyst activity test must show that the catalyst either reduces carbon monoxide emissions by 75% or that the engine exhaust carbon monoxide emissions are no more than 270 parts per million at 15% oxygen or that THC emissions are being reduced by at least 30%.
- The catalyst is working properly if emissions from the engine do not exceed the levels required for the initial test or annual catalyst checks.
- If engine emissions surpass the specified pollutant levels, the exceedances are not considered a violation, but you must shut down the unit and employ proper corrective actions. You must then perform a follow-up test within 7 days of the engine being started up again to show that the emission limits are being met. If the retest does not indicate compliance with the limit, the engine will need to be shut down again and the engine will not be permitted to operate, except for the purposes of startup and testing, until compliance with the limit can be demonstrated.

[Slide 11:]

Next, let's discuss the records you are required to keep.

- You must keep records of each notification and report that you submit, and all supporting documents for these notifications and reports
- You must keep records of the occurrence and duration of each malfunction
- You must keep records of performance testing and evaluations
- You must keep records of the required maintenance conducted on air pollution control and monitoring equipment.
- You must keep records of actions taken during malfunctions to minimize emissions and all corrective actions taken

If you have a Continuous Parameter Monitoring System, you must keep the following:

- Records of each period during which a continuous monitoring system is malfunctioning, inoperative, or out of control.
- Records of all required measurements needed to demonstrate compliance with an applicable standard.
- Records of all continuous monitoring system performance test results
- Records of all measurements as may be necessary to determine the conditions of performance tests and evaluations
- Records of all continuous monitoring system calibration checks
- Records of all adjustments and maintenance conducted on the continuous monitoring system
- Also, keep previous versions of the performance evaluation plan, and any requests for alternatives to the RATA

All records must be kept for five years from the date of creation.

[Slide 12:]

Here is a summary of the notifications you are required to submit:

- You must submit a Notification of Applicability or Construction/Reconstruction 120 days after the effective date of this rule.
- Submit a Notification of Compliance Status within 30 days after compliance has been demonstrated.

[Slide 13-14:]

In addition to the notifications, you must submit Semi-Annual Compliance Reports on January 31st and July 31st of every year.

The semi-annual report will cover the period from January 1st through June 30th or July 1st through December 31st. Please review the requirements on the screen to determine what information your Compliance Reports must contain.

[Slide 15:]

All notifications and reports should be sent to EPA Region 1 at the address shown here.

[Slide 16:]

You must comply with all requirements of this rule by the date shown on the screen.

[Slide 17:]

If you would like more information about the RICE rule, please visit the EPA RICE Compliance web page at the address shown. This site provides resources such as Q and A documents, fact sheets, sample notification forms, and recordings of webinars, all of which are designed to help you comply with this rule.

[Slide 18:]

Let's summarize the requirements for your existing non-emergency spark ignition 4-stroke rich burn engine at an area source with a site rating greater than 500 horsepower which is operated for more than 24 hours per year.

- If your engine is located in a remote area, you must fulfill the requirements listed here.

[Slide 19:]

- If your engine is not located in a remote area, you must install non-selective catalytic reduction; and
- Use a high temperature shutdown device **or** install a continuous parameter monitoring system to continuously monitor and maintain the catalyst inlet temperature.
- You must conduct an initial test.
- You must perform an annual catalyst check.
- You must keep records of all notifications submitted, testing and maintenance performed, malfunction and corrective actions taken, etc.
- You must retain all records for five years.
- You must submit Notifications of Applicability and Compliance Status
- You must submit a Semi-Annual Compliance Report
- You must be in compliance with all requirements of the rule by the date specified here.