Connecticut Department of Energy and Environmental Protection

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

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

40 CFR 63 Subpart ZZZZ
Major Source New Emergency Spark Ignition 4-Stroke Lean Burn Engine 250 ≤Horsepower ≤500

Connecticut Department of Energy and Environmental Protection

Continuous Compliance Requirements

•Emergency engines ≤500 HP located at major sources currently do not have any standards specified in the RICE rule.

•However, engines must meet NSPS requirements and any State emergency engine requirements.

Photo credit: EPA

Spark Ignition New Source Performance Standards (SI NSPS)

You are subject to the SI NSPS (40 CFR 60 Subpart JJJJ) if your emergency engine was:

–Constructed (ordered*) after June 12, 2006 **AND** manufactured on/after January 1, 2009

OR

–Modified/reconstructed after June 12, 2006.

*NOTE: For the purposes of this rule, the date that construction commences is the date the engine is ordered by the owner or operator.

Spark Ignition New Source Performance Standards (SI NSPS)

If you are subject to the SI NSPS, you must meet these requirements:

- **Emission and Operating Limits, Testing Requirements:**
  - See Table
  - Must meet these standards for the life of the engine
- **Fuel Requirements:**
  - Gasoline engines must use gas that meets the sulfur limit: cap of 80 ppm/gal

Spark Ignition New Source Performance Standards (SI NSPS)

If you are subject to the SI NSPS, you must meet these requirements:

- **Compliance Requirements:**
  - If you have a *certified* engine:
    - Install, configure, operate and maintain engine according to manufacturer's instructions
    - If you do not operate/maintain according to manufacturer's instructions:
      - –Keep maintenance plan and maintenance records, operate consistent with good air pollution control practices
      - –Conduct initial performance test and retest if engine is rebuilt or undergoes major repair or maintenance
  - If you have a *non-certified* engine:
    - Maintenance plan
    - Conduct initial performance test and retest if engine is rebuilt or undergoes major repair or maintenance

- **Recordkeeping/Reporting:**
  - Install non-resettable hour meter if your engine does not meet the non-emergency standards and:
    - – HP<500 built on/after January 1, 2011 or
    - – 500 HP built on/after July 1, 2010
  - Documentation of certification (EPA Certificate of Conformity)
  - Records of engine maintenance
  - Record hours of operation
  - Initial notification for non-certified engines if HP=500
  - Notification of Intent to Conduct Performance Testing 30 days prior to test
  - Results of performance testing within 60 days of test

Engine Certification

Photo credit: EPA

EPA Certificate of Conformity

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2012 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Generac Power Systems, Inc.
(U.S. Manufacturer or Importer)

Certificate Number: CGNXB06.82NN-012

Effective Date: 10/26/2011

Expiration Date: 12/31/2012

Byron J. Bunker, Acting Division Director
Compliance Division

Issue Date: 10/26/2011

Revision Date: N/A

Manufacturer: Generac Power Systems, Inc.
Engine Family: CGNXB06.82NN
Certificate Number: CGNXB06.82NN-012
Certification Type: Stationary (Part 60)
Fuel : Natural Gas (CNG/LNG)
Emission Standards : NMHC + NOx (g/kW-hr) : 13.4
CO (g/kW-hr) : 519
HC + NOx (g/kW-hr) : 13.4
Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

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Photo credit: EPA

Engine Category	Date Constructed/ Reconstructed/ Manufactured	Size/ Engine Type/ Fuel	Emission Standards	Importing/ Installing Reqs[6]	Compliance Requirements				Notification, Reports, and Records Requirements	General Provisions (40 CFR part 60)
					Engines being operated and maintained in a certified manner[2]		Engines being operated and maintained in a non-certified manner[3]			
					General Compliance	Performance Testing	General Compliance	Performance Testing		
SI ICE >25 HP	Commenced construction after 6/12/2006 and manufactured on or after 1/1/2009	Gasoline	60.4231(b) 60.4233(b)	60.4236(c), (d)	If using AFRC: 60.4243(g) 40 CFR part 1068, subparts A-D. 60.4243(d)	None	60.4243(a)(2)(ii) If using AFRC: 60.4243(g)	60.4243(a)(2)(ii)[6] 60.4244	60.4245(a), (b), (e)	60.4246 Table 3
		All except gasoline and rich burn LPG	60.4233(e)[5] Table 1	60.4236(c)	If using AFRC: 60.4243(g) **Certified**: 60.4243(b)(1) **Non-certified**: 60.4243(b)(2)	If natural gas engine and using propane as alternative fuel for >100 hrs/yr: 60.4243(e) **Non-Certified**: 60.4243(b)(2)(i)[5], 60.4244		**All Engines:** If natural gas engine and using propane as alternative fuel for >100 hrs/yr: 60.4243(e) 60.4244 **Certified**: 60.4243(a)(2)(ii) **Non-Certified**: 60.4243(b)(2)(i)[5]	60.4245(a), (b), (e) If natural gas engine and using propane as alternative fuel solely during emergency operations: 60.4243(e)	
Modified/Reconstructed	Modified or reconstructed after 6/12/2006	Gasoline	60.4233(f)(2)	None	If using AFRC: 60.4243(g) 60.4243(i)				60.4245(a), (b), (e)	
		Natural gas and lean burn LPG	60.4233(f)(4)						60.4245(a), (b), (d), (e)	

[1]Facilities with engines that are acting as temporary replacement units and that are located at a stationary source for <1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this rule with regard to such engines.

[2]If you operate and maintain the certified engine and control device according to the manufacturer's emission-related instructions, you are operating in a certified manner.

[3]If you do not operate and maintain the certified engine and control device according to manufacturer's emission-related instructions, your engine will be considered a non-certified engine.

[4]Owners and operators of ICE with a maximum engine power >19 KW (25 HP) and <75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to the rule applicable to engines with a maximum engine power ≥100 HP and <500 HP, may optionally choose to meet those standards.

[5]If you own/operate an engine that is ≤500 HP and you purchase a non-certified engine or you do not operate and maintain your certified engine and control device according to the manufacturer's emission-related instructions, you are required to perform initial performance testing as indicated in this slide, but you are not required to conduct subsequent performance testing unless the engine is rebuilt or undergoes major repair or maintenance. A rebuilt ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).

[6]The requirements of this section do not apply to ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

NSPS Emergency Engine Requirements

- No limits on hours of operation for emergency service
  - 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 checks and readiness testing
  - 50 of the 100 hours can be used for non-emergency purposes
    - Cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity

    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

Emergency Engine Requirements

Federal Only	Common to Both	State Only
•100 hr/yr limit: -Testing and maintenance checks -Readiness testing •50 hr/yr of the 100 hr/yr limit: -Non-emergencies if no financial arrangement	•Emergency hrs of operation: no limit (unless subject to 22a-174-3b or 3c) •Engine cannot be used as part of any other agreement or financial arrangement with another entity	•Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event **If operating under RCSA Sec. 22a-174-3b:** •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:** No restriction on hrs of use or fuel sulfur content, however total facility purchases of fuel are extremely limited

By when must I comply with the rule?

Upon startup

Photo credit: EPA

Where do I send notifications and reports?

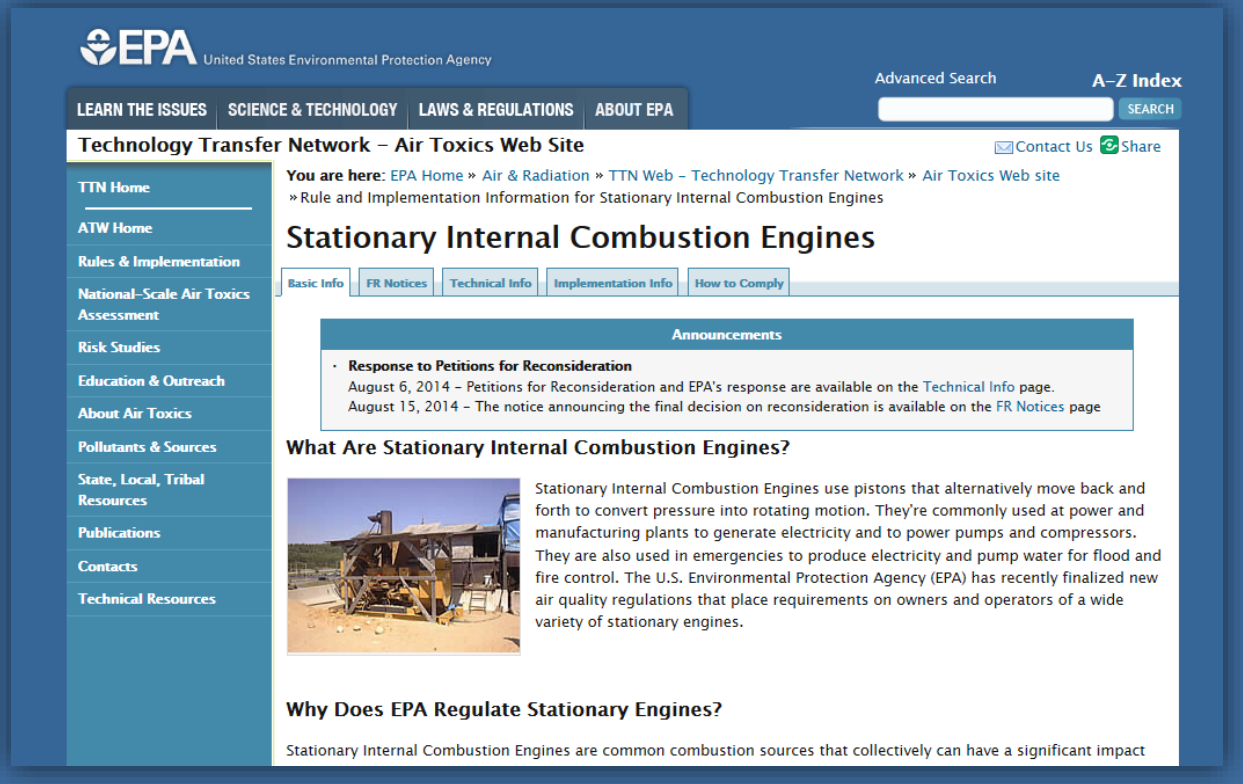
EPA REGION 1:

US Environmental Protection Agency
5 Post Office Square, Suite 100, Mail code: OES04-2
Boston, MA 02109-3912
Attention: Air Clerk

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!



Take Aways

Engine Type:

•A new or reconstructed emergency SI 4SLB engine at a major source having a site rating of greater than or equal to 250 horsepower and less than or equal to 500 horsepower

Compliance Requirements:

•Must meet NSPS requirements and State emergency engine requirements.

CT Emergency Engine Requirements

•Emergency hrs of operation: no limit (unless subject to 22a-174-3b or 3c)
•Engine cannot be used as part of any other agreement or financial arrangement with another entity
•Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event

If operating under RCSA Sec. 22a-174-3b:

–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:

–No restriction on hrs of use or fuel sulfur content, however total facility purchases of fuel are extremely limited

Take Aways

NSPS:

- Comply with SI NSPS, if applicable
- NSPS emergency engine requirements:
  - Emergency hours of operation: no limit
  - 100 hours/year allowed for:
    - Maintenance checks and readiness testing
    - 50 of the 100 hours can be used for non-emergency situations
      - Cannot be used for peak shaving, non-emergency demand response, or to supply power as part of a financial arrangement with another entity

- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet all non-emergency engine requirements.

Compliance Date:

- Upon startup