



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 New Emergency Engine >500 Horsepower



Connecticut Department of Energy and Environmental Protection

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 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



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 if no financial arrangement 	<ul style="list-style-type: none"> •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 	<ul style="list-style-type: none"> •Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event 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



Notification Requirements

•Initial Notification

–120 days after effective date or construction/reconstruction

–Notification should include:

- Name and address of owner/operator
- Address (physical location) of the affected source
- Relevant standard, or other requirement, that is the basis of the notification and the source’s compliance date
- Brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted
- Whether the source is a major or area source and
- Statement that the engine has no additional requirements and explain the basis of the exclusion (i.e., that it operates exclusively as an emergency engine if it has a site rating of >500 HP at a major source)

Example^a

Initial Notification of Applicability^b

National Emission Standards for Hazardous Air Pollutants:
Stationary Reciprocating Internal Combustion Engines
40 CFR Part 63 Subpart ZZZZ

Yes, I am subject to 40 CFR Part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

NAICS code(s): _____

Compliance Date: Existing source: May 3, 2013 New/reconstructed source: upon initial startup

Note: The May 3, 2013 compliance date for existing sources applies to the following engine types:

- Existing non-emergency compression ignition (CI) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions
- Existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions
- Existing stationary CI RICE located at an area source of HAP emissions

Company name: _____

Facility name (if different): _____

Facility (physical location) address: _____

My facility is a (please choose one): Major source Area source

Owner name/title: _____

Owner/company address: _____

^a This is an example of the type of information that must be submitted to fulfill the Initial Notification of Applicability Status requirement of 40 CFR 63, subpart ZZZZ. You may submit the information in another form or format, or you may use this form.
^b Initial Notification is due 120 days after the effective date of the rule or 120 days after you become subject to the rule

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By when must I comply with the rule?

Upon startup



Connecticut Department of Energy and Environmental Protection

You are subject to the CI NSPS (40 CFR 60 Subpart IIII) if:

–Your emergency engine was constructed (**ordered***) after July 11, 2005
AND manufactured after April 1, 2006 (July 1, 2006 for fire pump engines)

OR

–Your engine was modified/reconstructed after July 11, 2005

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



Compression Ignition New Source Performance Standards (CI NSPS)

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

Emission and Operating Limits, Testing Requirements, Monitoring Requirements:

- See Table
- Must meet these standards for the life of the engine



Compression Ignition New Source Performance Standards (CI NSPS)

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

Fuel Requirements:

- As of October 1, 2007 – 500 ppm sulfur diesel (LSD)
- As of October 1, 2010 – 15 ppm sulfur diesel (ULSD) for engines <30 l/cyl displacement
 - You may use up any diesel fuel acquired prior to October 1, 2010 that does not meet the requirements for nonroad diesel fuel.
- As of June 1, 2012 – 1,000 ppm sulfur diesel for engines \geq 30 l/cyl displacement
 - Per 40 CFR 60.4215(b), ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet fuel requirements.
 - If you have a pre-2011 model year ICE located in a remote area of Alaska, you may petition EPA for approval to use any fuels mixed with used lubricating oil that do not meet the fuel requirements of this section. You must demonstrate in your petition that there is no other place to use the lubricating oil.
 - Per 40 CFR 60.4217, owners/operators of ICE that do not use diesel fuel may petition EPA for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in 40 CFR 60.4204 or 60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.



Compression Ignition New Source Performance Standards (CI NSPS)

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

Compliance Requirements:

- If you have 2007 model year or later engine with displacement <30 l/cyl, or a fire pump engine that is 2008-2011 model year or later, depending on engine size:
 - Purchase certified engine
 - Install, configure, operate and maintain engine per manufacturer's instructions/procedures
 - Performance testing not required
 - Can operate differently than manufacturer's recommendations, but must then do performance test to show compliance
- Engines not required to be certified (Choose one of the following to demonstrate compliance):
 - Purchase certified engine
 - Keep records of performance test conducted on similar engine
 - Keep records of engine manufacturer data indicating compliance
 - Keep records of control device vendor data indicating compliance
 - Conduct initial performance test
- Engines ≥ 30 l/cyl displacement:
 - Initial performance test
 - Annual performance test for non-emergency engine
 - Continuously monitor operating parameters



Engine Certification

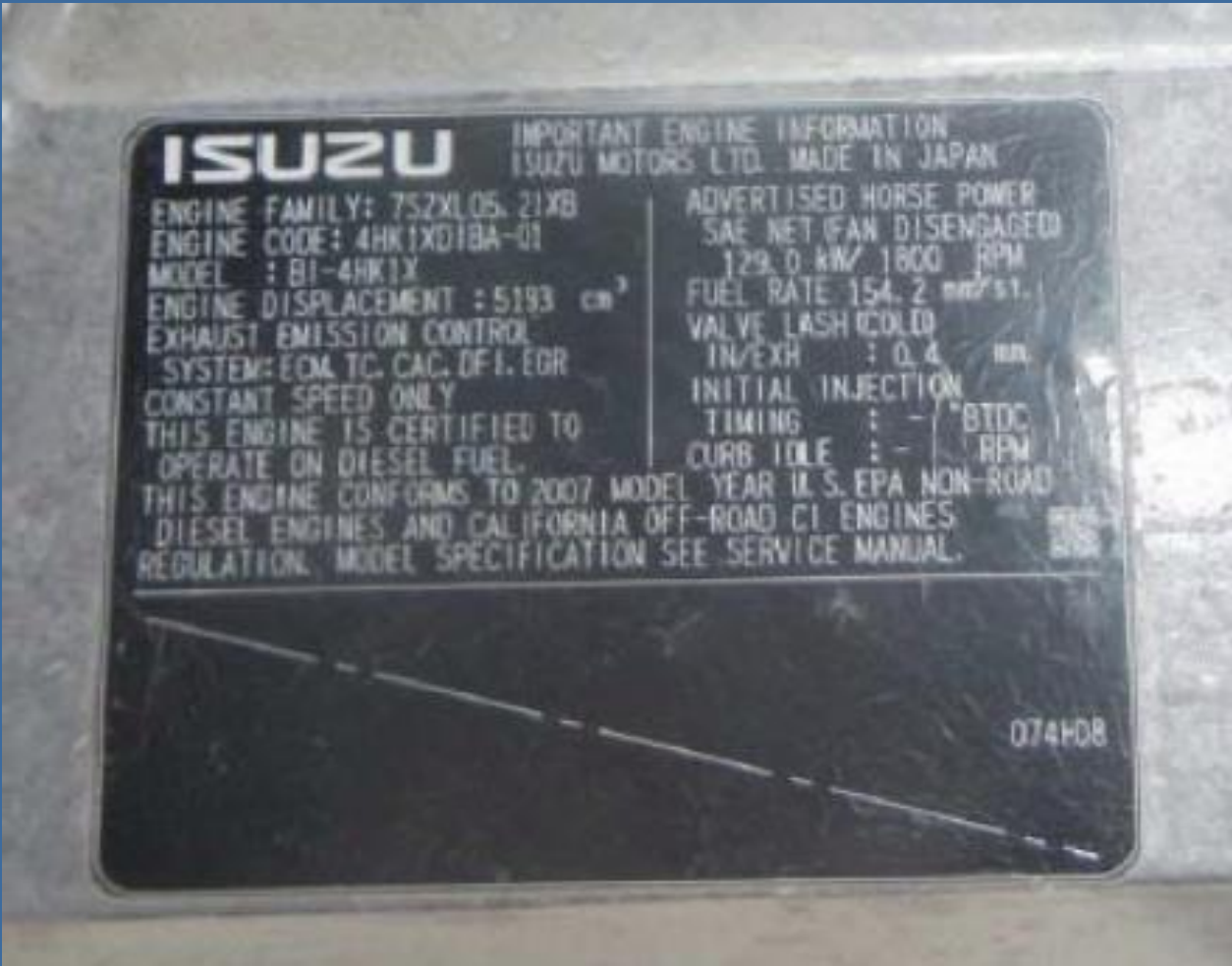


Photo credit: EPA



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. Burkner, 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			
<p>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.</p> <p>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.</p> <p>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 <i>ab initio</i> for other reasons specified in 40 CFR Part 60.</p> <p>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.</p>			

Photo credit: EPA

Recordkeeping/Reporting:

- Install non-resettable hour meter and keep records of operation
- Engine equipped with diesel particulate filter (DPF)
 - Backpressure monitor and records of corrective actions



CI Emergency Engine Category	Date Constructed/ Reconstructed/ Manufactured	Emission Standards ^{a,b,c,d}	Importing/ Installing Requirements	Compliance Requirements	Testing Reqs	General Reqs (40 CFR part 60)
Pre-2007 model year <10 l/cyl (except fire pump engines)	Commenced construction after 7/11/2005 and manufactured after 4/1/2006	60.4205(a) Table 1	60.4208(a), (b), (h), (i)	60.4211(a), (b), (f), (g)	60.4212	Table 8
Pre-2007 model year 10 l/cyl ≤ displacement < 30 l/cyl (except fire pump engines)		60.4205(a) 40 CFR 94.8(a)(1)				
2007 model year and later <30 l/cyl (except fire pump engines)		60.4205(b) 60.4202				
Fire pump engines <30 l/cyl manufactured prior to the model years in Table 3 of 40 CFR part 60, subpart III	Commenced construction after 7/11/2005 and manufactured as a certified NFPA fire pump engine after 7/1/2006	60.4205(c) Table 4	60.4208(h), (i)	60.4211(a), (b), (f), (g)		
Fire pump engines <30 l/cyl manufactured during or after the model year that applies to your fire pump engine power rating in Table 3 of 40 CFR part 60, subpart III				60.4211(a), (c), (f), (g)		
≥30 l/cyl (except fire pump engines)	Commenced construction after 7/11/2005 and manufactured after 4/1/2006	60.4205(d)(1) and (2)	60.4208(a), (b), (h), (i)	60.4211(a), (d), (f), (g)	60.4213	
Modified/Reconstructed <30 l/cyl	Modified or reconstructed after 7/11/2005	<u>Pre-2007 Model Year:</u> 60.4205(a)	60.4208(i)	60.4211(a), (e), (f), (g)	60.4212	
Modified/Reconstructed ≥30 l/cyl		<u>2007 Model Year and Later:</u> 60.4205(b)			60.4204(e)	
		60.4205(d)(1) through (3)			60.4213	

^aPer 60.4200(e), facilities with ICE 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 requirements in 40 CFR 60.4207.

^bPer 60.4215(a), ICE with a displacement of <30 l/cyl that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the emission standards in 40 CFR 60.4202 and 40 CFR 60.4205.

^cICE with a displacement ≥30 l/cyl that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the emission standards in 40 CFR 60.4215(c).

^dSpecial requirements apply to engines used in Alaska. Please refer to 40 CFR 60.4216 for the specific requirements and provisions that apply.



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, Monitoring 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
 - Initial performance test and subsequent testing every 8,760 hours or 3 years, whichever is first

If you have a *non-certified* engine:

- Maintenance plan
- Initial test and subsequent testing every 8,760 hours or 3 years, whichever is first



Spark Ignition New Source Performance Standards (SI NSPS)

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

•Recordkeeping/Reporting:

- Install non-resettable hour meter if engine was built on/after July 1, 2010, and record hours of operation
- Documentation of certification (EPA Certificate of Conformity)
- Records of engine maintenance
- Initial notification for non-certified engines
- Notification of Intent to Conduct Performance Testing 30 days prior to test
- Results of performance testing within 60 days of test



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

¹Facilities 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 subpart with regard to such engines.

²If 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.

³If 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.

⁴If your engine 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 section, but you are not required to conduct subsequent performance testing unless the engine is rebuilt or undergoes major repair or maintenance. A rebuilt engine means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).

⁵The requirements of this section do not apply to engines 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.



Where do I send notifications and reports?

Unless otherwise specified, send reports to:



EPA REGION 1:

US Environmental Protection Agency

5 Post Office Square, Suite 100, Mail code: OES04-2

Boston, MA 02109-3912

Attention: Air Clerk

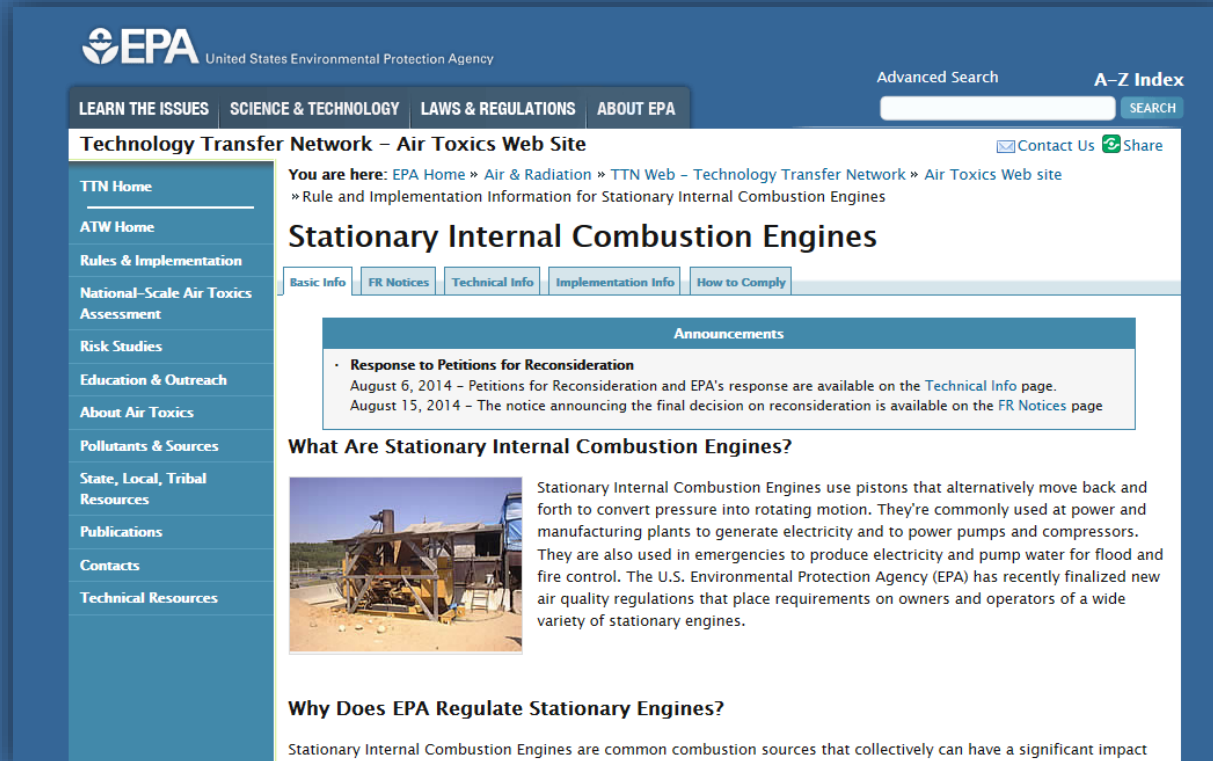


Connecticut Department of Energy and Environmental Protection

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 - Air Toxics Web Site. The page is titled "Stationary Internal Combustion Engines" and features a navigation menu on the left with options like "TTN Home", "ATW Home", "Rules & Implementation", "National-Scale Air Toxics Assessment", "Risk Studies", "Education & Outreach", "About Air Toxics", "Pollutants & Sources", "State, Local, Tribal Resources", "Publications", "Contacts", and "Technical Resources". The main content area includes 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". Below this is a section for "Announcements" with a bullet point: "Response to Petitions for Reconsideration" dated August 6, 2014, and August 15, 2014. A sub-section titled "What Are Stationary Internal Combustion Engines?" includes a photograph of a large industrial engine and a text description: "Stationary Internal Combustion Engines use pistons that alternatively move back and forth to convert pressure into rotating motion. They're commonly used at power and manufacturing plants to generate electricity and to power pumps and compressors. They are also used in emergencies to produce electricity and pump water for flood and fire control. The U.S. Environmental Protection Agency (EPA) has recently finalized new air quality regulations that place requirements on owners and operators of a wide variety of stationary engines." A final section titled "Why Does EPA Regulate Stationary Engines?" states: "Stationary Internal Combustion Engines are common combustion sources that collectively can have a significant impact".



Connecticut Department of Energy and Environmental Protection

Take Aways

Engine Type:

- A new or reconstructed emergency engine at a major source having a site rating greater than 500 horsepower

Compliance Requirements:

- Vary based on installation date
- Engine must meet both the federal and state standards to be considered an emergency engine

Engine Standards

- Emergency hours of operation: no limit (unless subject to RCSA 22a-174-3b or 3c)
- 100 hours/year allowed for:
 - Maintenance checks and readiness 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

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



Take Aways

NSPS:

- Comply with CI or SI NSPS, if applicable

Reporting:

- Initial Notification
 - Due 120 days after effective date or construction/reconstruction

Compliance Date:

- Upon startup

