



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

EMERGENCY ENGINES at Area Sources: An Overview



Donna Summers
October 9, 2013
ACE Academy



Apple Pie Hill Fire Tower,

Pine Barrens

LOGISTICS

- Ask questions anytime
- this is not exhaustive coverage ...
just an overview
- Start with federal regs
followed by state regs

DR = Demand Response

RICE = Reciprocating Internal Combustion Engine

ICE = Internal Combustion Engine

CI = Compression Ignition

SI = Spark Ignition

HAPS = Hazardous Air Pollutants

PCP = PreConstruction Permit

GP = General Permit

Gen = Generator

ER = Emergency

Req's = Requirements

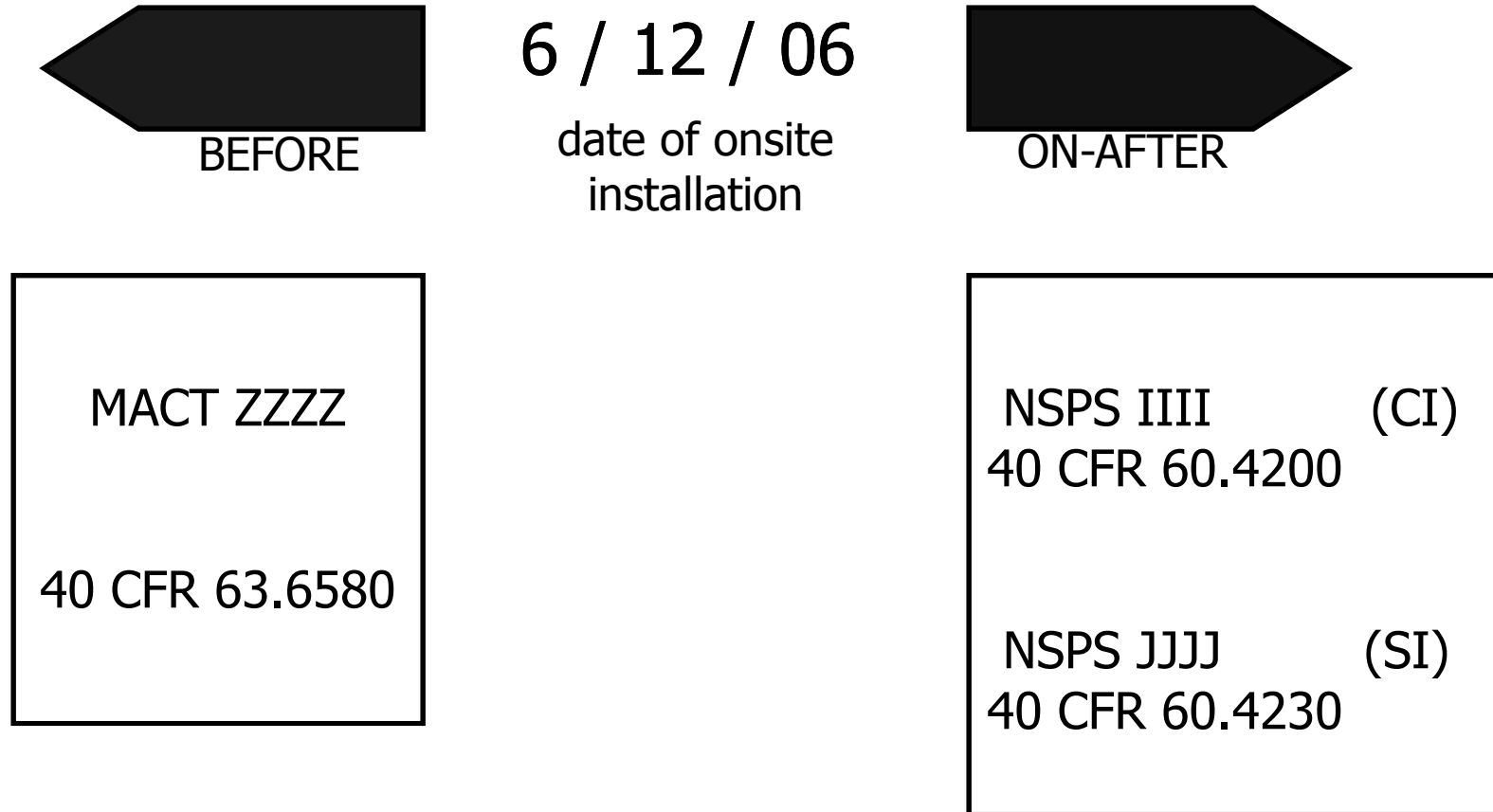
ULSD = Ultra Low Sulfur Diesel

What is an AREA SOURCE?

- a non-major...a non-Title V facility
- emit some HAPS, but not a lot
- emit <10 tpy any single HAP, and
emit <25 tpy of all HAPS combined

- Formaldehyde
 - Acrolein
 - Acetaldehyde
 - Methanol
-
- Plus traditional criteria pollutants

Federal Regulations will apply to most engines



Don't automatically have to DO the fed regs...first you still must meet the applicability standards...which vary....see next slides...

NSPS IIII/JJJJ applicability

Installed AFTER 6/12/06.....very complex

- Fuel type diesel CI nat gas SI
- Emergency non-emerg.
- Dates: ordered? Manufactured?
 Installed?
- Engine Model Year
- Engine Displacement (l/cyl)
- Fire Pump vs Electric Generator
- Max Engine Power (kw, hp)
- With / without Diesel Particulate Filter

MACT applicability

Installed BEFORE 6/12/06.....very simple

ALL SIZES
emergency engines
located at an area source

EPA online “quiz”

- NSPS quiz installed after 6/12/06
<http://www.epa.gov/ttn/atw/ice/quiz.html>
- MACT quiz installed before 6/12/06
<http://www.epa.gov/ttn/atw/rice/output/quiz.html>
- To restart quiz: Refresh ...
'back button' doesn't work well

Federal Regs DO NOT apply to...

- NOT for motor vehicles
- NOT for mobile engines, non-road engines
- NOT for combustion turbines
- NOT for engines at test cell / test stand
- NOT for most temporary engines

COMMERCIAL

office bldg...hotel...store...telecomm...restaurant...bank...dr's office...sports...performing arts

INSTITUTIONAL

RESIDENTIAL

MACT ZZZZ MAY NOT apply to...

Residential

Commercial

Institutional

http://www.epa.gov/ttn/atw/icengines/docs/guidance_emergency_engine_def.pdf

EPA memo dated Aug 9, 2010

Based on your NAICS code

Exempt as long as ER DR <15hr/yr and not used in Local Rel Plan at all

Find your NAICS code here:

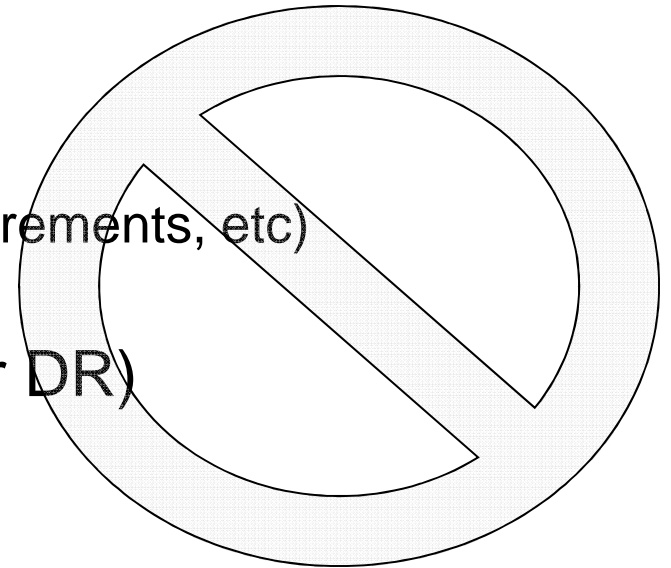
<http://www.naics.com/search.htm>

RECAP

- Installed >6/12/06, worry about NSPS (applicability complex)
Installed <6/12/06, worry about MACT (applicability simple)
- Fed Regs exempt many categories
- What does MACT actually require ??? →

MACT Emergency Engines

- RELAXED rules for existing EMERGENCY engines (< 6/12/06)
- NO numerical emission limits to meet
- NO stacktesting
- NO operating limits (temperature requirements, etc)
- NO fuel requirements (unless using for DR)
- NO notification requirements
- NO initial compliance demonstrations (testing, continuous monitors, etc)



MACT Emergency Engines Summary

ARE :

- Best Mgmt Practices
- Maintenance Req's
- Continuous Compliance Req's
- Recordkeeping Req's

MAY BE :

- Reporting Req's
- Fuel Req's

MACT - Best Management Practices

6603(a), follow Table 2D

- CHANGE oil & filter 500 hrs/op
(or 1x per year, whichever comes first)

- INSPECT hoses/belts 500 hrs/op
(or 1x per year, whichever first, replace as needed)

- INSPECT air filter (CI) 1000 hrs/op
INSPECT spark plugs (SI) 1000 hrs/op
(or 1x per year, whichever first, replace as needed)

MACT Emergency Engines Summary

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MACT - Maintenance

6625 e f h plus i/j

e= follow mfg specs

f= non-resettable hr meter

h= minimize idle time / startup time, <30 mins

i/j= alternative Oil Change Program

MACT Emergency Engines Summary

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MAY BE :

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- Fuel Req's

MACT - Continuous Compliance

6605 and 6640

- 6605= follow mact at all times...and...use equip in good practice

- 6640= Table 6 (follow mfg specs)

★ = only run according to the emergency stds of para (f)1-4 ★

- | | |
|--|----------------------|
| 1. True Emergency Use | Unlimited |
| 2. combo of Testing&Maint/ Emergency DR | Bank: max 100 hrs/yr |
| 3. n/a, for Major Title V's only | n/a |
| 4. Non-Emergency Use ("special conditions") | Up to half your bank |
- * non-emergency w/ NO financial plan, storm/preventative....repairing power lines
 - * non-emergency WITH financial plan, local reliability..."cliff"
 - * peak shaving, but only until May 3, 2014

What is Emergency DR?

Emergency Demand Response

Blackout is imminent

Declared Energy Emergency Alert Level 2

-or-

Deviation of voltage/frequency of at least 5%

MACT Emergency Engines Summary

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- Maintenance Req's
- Continuous Compliance Req's
- Recordkeeping Req's

MAY BE :

- Reporting Req's
- Fuel Req's

MACT - Recordkeeping

6655 and 6660

ALWAYS keep records of:

- # hours of operation (per non-resettable hr meter) for both ER and non-ER use
- reason for use
- all maintenance conducted

IF used for ER DR (or Local Reliability Plan), also keep records of:

- official Notification of the situation
- date
- actual start/end times

IF required to use ULSD, keep those records too (fuel bill of lading)

Records ok in any format (hardcopy or electronic)

Retain 5 yrs worth

MACT Emergency Engines Summary

ARE :

- Best Mgmt Practices
- Maintenance Req's
- Continuous Compliance Req's
- Recordkeeping Req's

MAY BE :

- Reporting Req's
- Fuel Req's

MACT - Reporting (maybe)

6650- Table 7

Reporting Req's only for SOME emergency gens

- IF sized 100 hp+ AND emergency DR > 15 hr/yr (Level 2, 5%)
- or
- IF sized 100 hp+ AND operated at all under a Local Reliability financial arrangement (cliff)

Report Annually per 63.6650(h)(1) – (3)

First report due March 31, 2016....covers calendar year 2015

Subsequent reports again due March 31.....covers prior cal year

ELECTRONIC REPORT ONLY....no paper

www.epa.gov/cdx Compliance and Emissions Data Reporting Interface (CEDRI)

Includes (for example)

- Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
- Emergency DR: # hours actually used, hours in your contract, dates /times/reason used, etc.
- Local Reliability: # hours actually used, who dispatched the engine , dates/times/reason used, etc.
- Any deviations from the ULSD req's

Reporting Req's for ALL emergency gens

IF you can't do a Best Mgmt Practice on time because of an ongoing emergency/unacceptable risk, you can delay it until later, (but do it asap). Report that you did it , and explain why the delay. Per Footnote 2 of Table 2D.

MACT - Fuel (maybe)

6604(b) ULSD

Only applies IF :

>100 HP
and
displacement <30 liters per cylinder
and
used for (or under contract for) >15 hrs/yr ER DR (or used at all in Local Reliability Plan)

Beginning January 1st 2015, must use ULSD (our sub9 doesn't require it until July 2016)

Can use up existing fuel supplies

MACT - OPEN FOR COMMENT

EPA recently agreed to RECONSIDER some provisions of MACT, and are receiving public comment:

Remains open until November 5, 2013 (60 days after publication in the Federal Register, Vol. 78, No. 172 / Thursday, September 5, 2013)

For details and instructions on HOW TO COMMENT, see this Fact Sheet:

<http://www.epa.gov/ttn/atw/icengines/docs/20130829fs.pdf>

The ENTIRE MACT rule is NOT being considered for revision. Only certain provisions are, incl:

- * Use of ULSD by some emergency engines
- * Reporting Req's for some emergency engines
- * Using non-emergency engines up to 50 hrs/yr during non-emergency times per a financial agreement with third party

And these are NOT yet being revised, the EPA is only CONSIDERING revising them, based on what public input it receives.

MACT - compliance dates

CI - Compression Ignition

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

SI - Spark Ignition

Your **compliance date** is October 19, 2013.

end of MACT

Demand Response

6640= Table 6 (follow mfg specs)

★ = only run according to the emergency stds of para 6640(f)1-4 ★

- | | |
|--|----------------------|
| 1. True Emergency Use | Unlimited |
| 2. combo of Testing&Maint/ Emergency DR | Bank: max 100 hrs/yr |
| 3. n/a, for Major Title V's only | n/a |
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- * non-emergency w/ NO financial plan, storm/preventative....repairing power lines
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What is Emergency DR?

Emergency Demand Response

Blackout is imminent

Declared Energy Emergency Alert Level 2

-or-

Deviation of voltage/frequency of at least 5%

What are those 3 “Special Conditions” ?

1 of 3 Non Emergency Use

NOT part of a financial agreement

ex) storm is coming, you want to run your gens now, to PREVENT a possible blip from occurring, as a proactive measure. There is no emergency (yet), grid is fine for now, but you want to ensure continuity of your operations, and prevent a possible interruption in power, so you run your gens early.

ex) while maint/repair work is occurring on your electrical equip. Work could be done by you, or by PSEG, etc. There is no emergency, and overall the grid is fine, but your electrical equip needs some maint/repair/upgrade. You can run your gens during while that work is being conducted under the terms of these 3 Special Conditions.

What are those 3 “Special Conditions” ?

2 of 3 Local Reliability Plan

IS part of a financial agreement

ex) grid is compromised, starting to act glitchy, but not yet bad enough to meet “Emergency Demand Response” standards. Not yet declared Energy Alert Level 2. Voltage Reduction has not yet reached at least 5%. But grid is starting to act glitchy, so your provider may have you run your gens to help restore local reliability and help prevent an Alert Level 2 from being reached.

What are those 3 “Special Conditions” ?

3 of 3 Peak Shaving

done primarily for economic reasons

doesn't involve any problems with the grid

your gens make electricity during “peak” or “popular” times, like a hot summer day.

only allowed until 5/3/2014

NJ & Demand Response

- EPA / Federal Regs

Emergency Engines **CAN** be used for **ER DR**
and Local Reliability Plan (cliff)
and Peak Shaving (until May 2014)

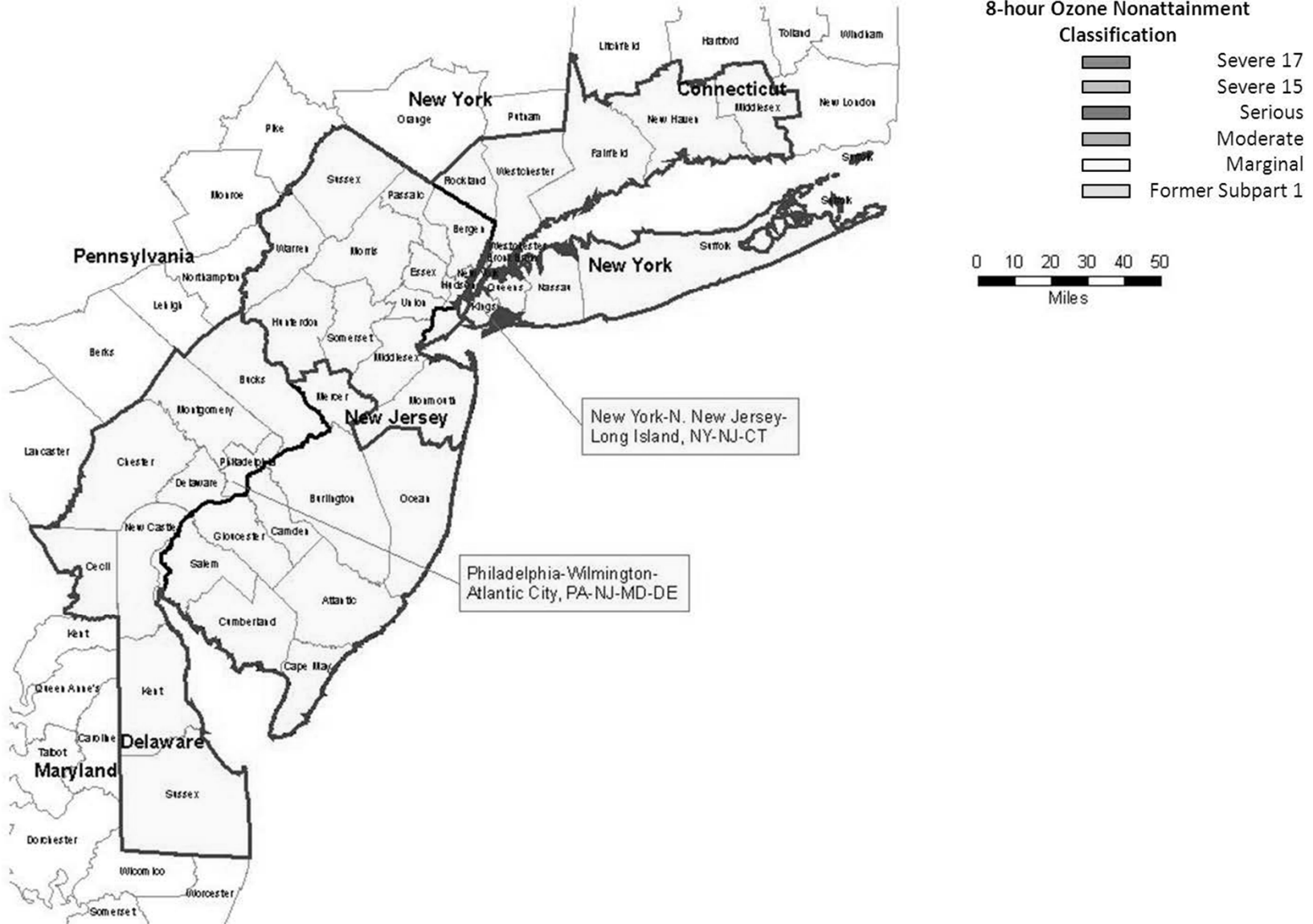
- NJ Regs

Emergency Engines **CAN NOT** be used for **ER DR**
or Local Reliability Plan (cliff)
or Peak Shaving

- Here's why we don't allow it → → →

OZONE NON-ATTAINMENT AREAS(8-HR STD)

8-hour Ozone Nonattainment Areas in Blue Border



In NJ, generators enrolled in these plans:

Utility Energy Assistance Program
Local Reliability Plan
Demand Response Program
Peak Shaving Plan
etc

CAN NOT be classified as emergency generator.

CAN NOT follow relaxed rules.

CAN NOT get GP-005.

In NJ,

You CAN participate in those programs IF:

- IF the engine is treated as an (everyday) NON-emergency engine
- AND IF it gets an approved preconstruction permit (PCP)...not a General Permit
- AND IF the engine is clean & efficient enough to meet NJ's numerical sub19 NOx emission limits (g/bhp-hr) Probably need to add controls.

0.9

1.5 (gas) or 2.3 (oil)

NEW

EXISTING

Link to compliance alert about Demand Response

<http://www.nj.gov/dep/enforcement/advisories/2013-05.pdf>



COMPLIANCE ADVISORY ENFORCEMENT ALERT

Making You Aware of Incentives and Compliance Assistance Opportunities

Compliance & Enforcement

Issued: April 8, 2013

#2013-05

Emergency Generators Participating in *Demand Response and Peak Shaving Programs* Require Air Permit Revision and Air Pollution Control

Who is affected by this advisory?

Any facility in New Jersey that owns or operates a stationary internal combustion engine that generates electricity permitted as an emergency generator under Air General Permit (GP) 005, Air Preconstruction Permit, or Title V Operating Permit.

Why is DEP issuing this advisory?

The Department has discovered that some facility owners and operators of emergency generators are entering into electric supply agreements for peak (load) shaving, demand response and like programs. Operating emergency generators for peak shaving or demand response is permissible only if the approved air permit contains conditions specifying allowable non-emergency use and includes air pollution control.

Stationary internal combustion engines used as emergency generators may be operated without air pollution control in three limited cases: (1) during the performance of normal testing and maintenance procedures, as recommended in writing by the manufacturer and/or as required in writing by a Federal or State law or regulation; (2) when there is power outage or the primary source of mechanical or thermal energy fails because of an emergency; or, (3) when there is a voltage reduction issued by PJM and posted on the PJM internet website (www.pjm.com) under the "emergency procedures" menu. Operation of the engine that does not meet one of these three cases disqualifies the equipment in question from meeting the definition of an emergency generator and therefore subjects the engine to air pollution control requirements and a regular air pollution control permit.

"Demand response," as recognized by the Department, is a preemptive action in which the participating facility voluntarily agrees to commence operation of its electrical generating equipment prior to the reduction in voltage or failure of electrical power in return for economic benefit. This is outside the allowable operation of emergency generators without air pollution control.

The emergency generator general permit does not allow the use of a generator for demand response or peak shaving programs. To participate in demand response or peak shaving programs a facility would have to obtain a regular air Preconstruction or Operating permit approval. This review would require the engine to comply with all applicable requirements including NOx RACT, State of The Art and health risk screening analysis.

end of Demand Response

What does NSPS require for emergency engines?

Remember, NSPS may affect installs AFTER 6/12/06,
with a complex applicability...

NSPS - Emergency Engines

At its most basic level,
NSPS engines must meet numerical emission limits,
as demonstrated in one of two ways:

1. Purchase a certified engine
- or
2. Test your own engine

NSPS - Emergency Engines

in addition, there will be varied requirements for:

Monitoring

Recordkeeping

Submit one-time Notifications

Submit recurring Reports

Etc

Best to use EPA's online "quiz" and determine exactly what NSPS req's you have.

end of NSPS

Main EPA engine website

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

07/26/2013 RICE Summary Table of Requirements

The screenshot shows the EPA website interface. At the top, the navigation menu includes 'LEARN THE ISSUES', 'SCIENCE & TECHNOLOGY', 'LAWS & REGULATIONS', and 'ABOUT EPA'. The main heading is 'Technology Transfer Network – Air Toxics Web Site'. A breadcrumb trail reads: '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 title is 'Stationary Internal Combustion Engines – Implementation Information'. Below this, a horizontal menu has 'Implementation Info' selected and highlighted with a box and an arrow. Under 'On this page', a list of links includes 'Table of Requirements', which is also highlighted with a box and an arrow. To the right, a 'Regional Contacts' box contains a link for 'EPA Regional RICE NESHAP Contacts (PDF) (1 pg, 44k)'. Below, a 'Fact Sheets' table lists various documents with their dates and descriptions.

Navigation Path:
EPA Home » Air & Radiation » TTN Web – Technology Transfer Network » Air Toxics Web site » Rule and Implementation Information for Stationary Internal Combustion Engines

Stationary Internal Combustion Engines – Implementation Information

On this page

- Fact Sheets
- Reg Nav
- Example Forms
- Questions and Answers
- **Table of Requirements**
- Webinars / Presentations

Regional Contacts

EPA Regional RICE NESHAP Contacts (PDF) (1 pg, 44k)

Fact Sheets

Date	Description	File Download
08/29/13	Fact Sheet – Reconsideration of Final Standards for Stationary Reciprocating Internal Combustion Engines	
01/14/13	Overview Fact Sheet – Final Amendments	
01/14/13	Specifics about Provisions Related to Emergency Engines	
05/22/12	Summary of Proposed Changes	
03/02/11	Fact sheet for amendments to the final air toxics standards for reciprocating internal combustion engines	

EPA Contact Persons

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Actual Regulations

always take final precedence

www.ecfr.gov

end
of
federal
regs

NJ engine regulations

NJ

1. Demand Response
2. sub8 – permitting
3. sub19 – NO_x RACT

NJ

1. Demand Response
2. sub8 – permitting
3. sub19 – NOx RACT

NJ Engine Permits

Your engine may require an Air Permit

- EMERGENCY engine
- ≥ 1 MMBTU/hr needs permit
- Grandfathered date: March 5, 1973
- NJAC 7:27-8.2 c 1
- General Permit GP-005 is available for Emergency Generators, \$410 covers five year period.

Get a Driver's LicenseAND.... follow all the rules of the road

Get an Air PermitAND.... follow all rules & requirements

NJ

1. Demand Response
2. sub8 – permitting
3. sub19 – NOx RACT

ER engines: 3 NOx RACT Triggers per rule

37 Kw +

1 engine

“New”

started operation
AFTER 3/7/07

148 Kw +

1 engine

“Existing”

started operation
BEFORE 3/7/07

148 Kw +

Group of engines
(37-147 kw)

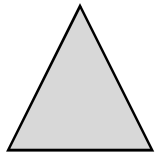
Date is irrelevant

WHAT MUST AN EMERGENCY GENERATOR DO TO COMPLY WITH NO_x RACT ?



1. Recordkeeping Rule:

Keep records listed in 19.11 { 19.2 (d) }



2. Triangle Rule:

Only run during 3 scenarios allowed in 19.1 { 19.2 (d) (1) }



3. Stop-Soon Rule:

Stop running asap { 19.2 (d) (3) }



4. Orange Air Rule:

Forbidden to test/maintain equipment on
Unhealthy air quality days { 19.2 (d) (2) }

NEW exception to the Orange Air Rule

compliance alert forthcoming

affects emergency gens at:

Drinking Water

Sewerage Treatment

and Sludge Management

these plants DON'T have to follow the orange air rule for the 48 hours prior to a named storm coming to their area. Including winter storms. CAN test emergency gens regardless of air quality during that time.

OLD exception to the Orange Air Rule

- Still in effect
- some other regulation may take precedence
- ex) hospitals with Joint Commission accreditation

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