

# Emergency and Portable Internal Combustion Engine (ICE) Environmental Compliance Management Overview

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## Agenda

1. (Very) Brief Overview of Federal Engine Rules
2. Potential Air Permitting Implications
3. Compliance Best Practices

# Regulated Sources

*Overview of Federal Regulations*

- ▶ Stationary sources (e.g., industrial engines, turbines, boilers)
- ▶ Mobile source (vehicles)
- ▶ Non-road engines (construction equipment, welders, etc.)



# Generator vs Engine

## Overview of Federal Regulations

- ▶ Federal regulations are based on the engine HP rating not the generator kW
- ▶ Engines look at mechanical horsepower (HP)
  - Not electric HP or other HP unit type
  - We may also use mechanical kiloWatt (kW or kW<sub>mech</sub>)
- ▶ More specifically, we use brake HP (BHP)
  - The power at the crankshaft; prior to losses in the gearbox, exhaust, compressor, pump, or generator
  - Do not use the HP rating of a compressor or pump
  - Do not use the kW<sub>e</sub> (or kVa) rating of a generator

Parameter Of Comparison	hp	bhp
Definition	hp stands for horsepower. It is the total output power of a system.	bhp stands for brake horsepower. It is the output power of the engine of a system.
Measured For	It is measured for the whole system and gives the efficiency of the system.	It is only measured for the engine of the system and gives the efficiency of the engine under ideal conditions.
Frictional Losses	It doesn't take the frictional and other power losses into account.	It includes the frictional and other power losses of the system.
Measured Using	It is measured using a simple dynamometer.	It is measured using a brake type dynamometer.
Technique for Measurement	The dynamometer is connected to the engine, and a torque converter is used.	A brake is applied to the flywheel, and the intensity of this brake determines the bhp.

# Stationary RICE

## *Overview of Federal Regulations*

- ▶ Not mobile; not **non-road engine**
- ▶ Non-road engines (per 40 CFR 1068.30)
  - Self-propelled (such as bulldozers) **OR**
  - Intended to be propelled while in operation (such as lawnmowers), **OR**
  - Portable or transportable – designed to be carried or moved from location to location (e.g., has wheels, skids, carrying handles, dolly, trailer or platform)
- ▶ **\*\*Exception**
  - Is used to propel a motor vehicle, aircraft, or competition equipment
  - Is regulated under NSPS
  - Remains (or will remain) at a fixed location for more than 12 consecutive months or for the full annual operating period at seasonal source

# Temporary “Exemption” – Two Big Caveats

*Overview of Federal Regulations*

1. Replacing one temporary engine with another to be used for the same purpose does not restart the 12-month clock

*The 12-month clock applies to the location and purpose, not a particular engine*

2. An engine to be used temporarily in place of a stationary engine (e.g., while it is being overhauled) is considered a stationary engine

*The location and purpose is stationary even if it consists of more than one engine over time*

# Should *this* engine be permitted?

*Overview of Federal Regulations*

- ▶ Maintenance rented an engine for emergency supply of instrument air because owned engine is unreliable
  - In fact, they've rented several engines now
  - And the owned engine is still used during rental swap-outs



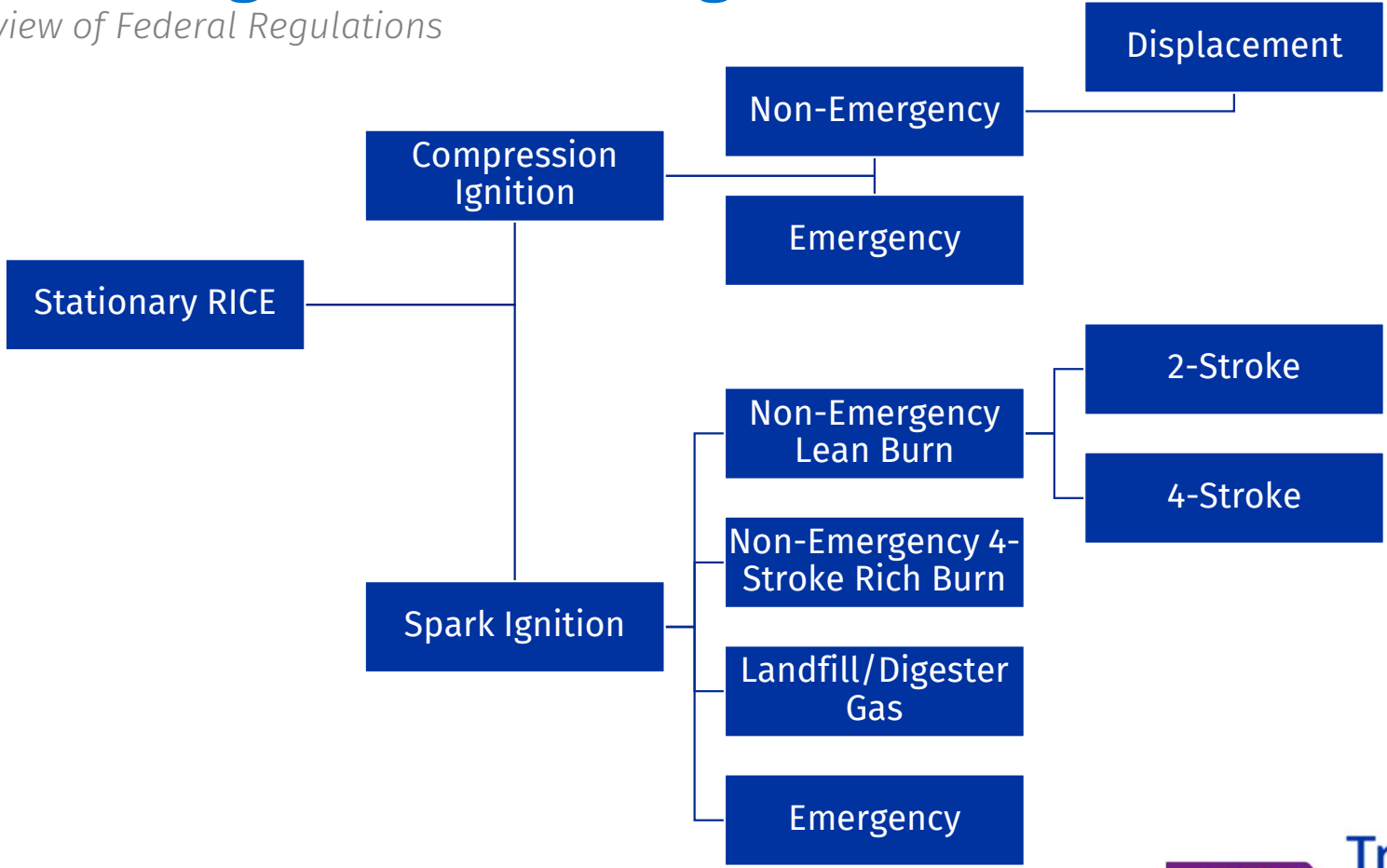
# Should *this* engine be permitted?

*Overview of Federal Regulations*

- ▶ Yes, the “temporary” rental units need to be permitted
  - The location and purpose is stationary/consistent regardless of the number of engines used
  - Need pedigrees; permit worst-case
    - ◆ Size, fuel, design, make, model
    - ◆ When it was first ordered/installed
    - ◆ Any past modification / reconstruction determinations
    - ◆ Certificate of Conformity

# EPA's Categorization of Engines

Overview of Federal Regulations



# MACT Major vs. Area Source

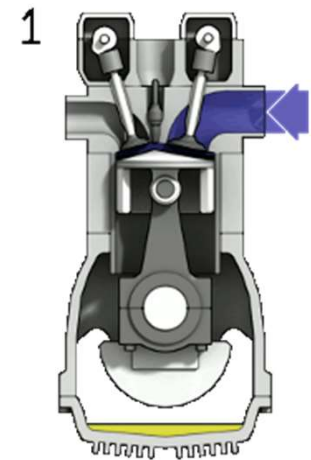
*Overview of Federal Regulations*

- ▶ Major Source of HAP
  - Any source or group of sources within a contiguous area and under common control that has the potential to emit, in the aggregate (i.e., the whole site)
    - ◆ 10 tpy of any HAP, **OR**
    - ◆ 25 tpy of total HAP
  - Fugitive emissions are included in the determination
  - No source category qualifiers
- ▶ Area Source
  - Any stationary source of HAP that is **not** a major source

# Spark Ignition Categories

*Overview of Federal Regulations*

- ▶ Spark Ignition (non-diesel) engines can be categorized by
  - 4-stroke vs 2-stroke
    - ◆ 2-stroke completes power cycle in single crankshaft revolution
    - ◆ 4-stroke completes power cycle in 2 crankshaft revolutions – more common
  - Rich burn vs lean burn
    - ◆ Rich burn means operating air to fuel ratio divided by stoichiometric air to fuel ratio at full load is less than or equal to 1.1
    - ◆ Lean burn is not rich burn – has a higher air to fuel ratio
      - 2-stroke engines are always lean burn
    - ◆ Not generally found in spec sheet – needs to be calculated



# Summary of Requirements

## *Overview of Federal Regulations*

- ▶ 40 CFR 63, Subpart ZZZZ (RICE MACT)
  - Existing and new engines
  - Different fuel types
  - Located at major and area sources of HAP
- ▶ 40 CFR 60, Subpart IIII (NSPS 4I)
  - “New” compression ignition (CI) engines (diesel)
- ▶ 40 CFR 60, Subpart JJJJ (NSPS 4J)
  - “New” spark ignition (SI) engines (gasoline, natural gas, propane, etc.)

# Summary of Regulated Pollutants

Overview of Federal Regulations

NSPS JJJJ	NSPS IIII	RICE MACT
VOC	NMHC/HC	Formaldehyde and CO (as surrogates for Total HAP)
NO <sub>x</sub>	NO <sub>x</sub>	
CO	CO	
PM	PM	

# RICE MACT Affected Source Definition

## *Overview of Federal Regulations*

- ▶ RICE at major/area sources
- ▶ Existing source dates:
  - > 500 bHP at major source – Dec 19, 2002
  - ≤ 500 bHP at major source – June 12, 2006
  - All bHP at area source – June 12, 2006
- ▶ Considered “new” is constructed on or after these dates
- ▶ “Commence construction” is date the engine is installed (different from NSPS)
- ▶ Relocation and/or change of ownership (buying used engine) of an existing RICE does **not** make it new

# RICE MACT Exemptions

*Overview of Federal Regulations*

- ▶ Not applicable to
  - Engines at test stands
  - National security exemption (upon request)
  - Nonroad engines
- ▶ Applicable with no requirements
  - Area source – **existing** residential, commercial, or institutional **emergency** RICE
  - Major source – **existing** SI 2SLB > 500 HP, **existing** SI 4SLB > 500 HP, ALL **existing** emergency or limited use RICE > 500 HP, **existing** RICE > 500 HP combusting landfill or digester gas (>10% gross heat input annually)



# RICE MACT Compliance via NSPS Compliance

*Overview of Federal Regulations*

- ▶ Engines that meet RICE MACT requirements by meeting NSPS are as follows
  - Major sources, new/reconstructed
    - ◆ CI RICE  $\leq$  500 HP
    - ◆ 2SLB RICE  $\leq$  500 HP
    - ◆ 4SLB RICE  $<$  250 HP
    - ◆ 4SRB RICE  $\leq$  500 HP
    - ◆ RICE  $\leq$  500 HP combusting landfill gas or digester gas (>10% gross heat input annually)
    - ◆ Emergency or limited use RICE  $\leq$  500 HP
  - Area sources
    - ◆ ALL new/reconstructed RICE

## Emission Standards: New RICE Located at Major Sources

HP	Engine Subcategory					
	Non-emergency					Emergency
	CI	SI 2SLB	SI 4SLB	SI 4SRB	SI LFG/DG	
<250	Comply with CI NSPS	Comply with SI NSPS	Comply with SI NSPS	Comply with SI NSPS	Comply with SI NSPS	Comply with CI/SI NSPS
250-500			14 ppm CH <sub>2</sub> O or 93% CO reduction			
>500	580 ppb CH <sub>2</sub> O or 70% CO reduction	12 ppm CH <sub>2</sub> O or 58% CO reduction	14 ppm CH <sub>2</sub> O or 93% CO reduction	350 ppb CH <sub>2</sub> O or 76% CH <sub>2</sub> O reduction	No standards	No standards

Note: New limited use engines >500 HP at major sources do not meet any emission standards under the NESHAP

Engine subject to limited requirements: major source, emergency new and reconstructed RICE > 500 HP: Initial notification only

# RICE MACT Typical Requirements for Existing Emergency Engines\*

*Overview of Federal Regulations*

- ▶ No time limit on emergency use
- ▶ Minimize idle and startup to < 30 minutes
- ▶ Maintenance annually or based on operating hours (oil change, inspect air cleaner, hoses, belts, spark plugs)
- ▶ Maintenance and readiness checks < 100 hr/yr
  - Must install non-resettable hour meter
- ▶ Operate according to manufacturer's instructions or implement own plan
- ▶ Up to 50 hr/yr non-emergency use operation (counts towards 100 hr/yr for maintenance and testing)

\*Except existing emergency engines > 500 HP at major HAP sources



## Compliance Requirements by Engine Subcategory

Engine Subcategory	Compliance Requirements
<p>Existing emergency/black start:</p> <ul style="list-style-type: none"> <li>• &lt;100 HP at major source</li> <li>• ≤500 HP at major source</li> <li>• All at area source</li> </ul> <p>Existing non-emergency:</p> <ul style="list-style-type: none"> <li>• &lt;100 HP at major source</li> <li>• CI ≤300 HP at area source</li> <li>• SI ≤500 HP at area source</li> <li>• SI 2SLB &gt;500 HP at area source</li> <li>• SI LFG/DG &gt;500 HP at area source</li> <li>• SI 4SLB/4SRB &gt;500 HP at area source used ≤24 hours/year or in remote area</li> </ul>	<ul style="list-style-type: none"> <li>• Operate/maintain engine &amp; control device per manufacturer's instructions or owner-developed maintenance plan</li> <li>• May use oil analysis program instead of prescribed oil change frequency</li> <li>• Emergency engines must have hour meter and record hours of operation</li> <li>• Keep records of maintenance</li> <li>• Notifications not required</li> <li>• Reporting and ULSD for emergency engines used for local reliability</li> </ul>

# NSPS Affected Source Definition

## *Overview of Federal Regulations*

- ▶ Date of construction = date engine is ordered by owner/operator
- ▶ NSPS III for diesel engines
  - Commence construction after 7/11/2005 and manufactured after 4/1/2006 and are not fire pumps **OR** manufactured after 7/1/2006 as a certified fire pump engine
- ▶ NSPS JJJ for non-diesel engines (natural gas, propane, gasoline)
  - Commence construction after 6/12/2006 and manufactured after 1/1/2009 for emergency engines greater than 25 HP
- ▶ NSPS III/JJJ include import/install deadlines to prevent stockpiling of earlier Tier/older engines

## Regulatory Gap

- ▶ If an engine constructed (on-site installation) after 6/12/06 has no RICE MACT requirements
  - Note - it is still technically an affected source
- ▶ And if the same engine was manufactured before the applicable NSPS date, **the NSPS does not apply**
- ▶ NSPS IIII – 4/1/06
- ▶ NSPS JJJJ – 1/1/08 for lean burn RICE with  $500 \leq \text{HP} < 1350$ 
  - 7/1/07 for other RICE with  $\text{HP} \geq 500$
  - 7/1/08 for RICE with  $\text{HP} < 500$
  - 1/1/09 for emergency RICE with  $\text{HP} > 25$

# NSPS III Emission Standards

## *Overview of Federal Regulations*

- ▶ Modeled after mobile (nonroad and marine) standards
- ▶ General engine categories
  - Per cylinder displacement < 10 L
  - Per cylinder displacement  $\geq$  10 L but < 30 L
  - Per cylinder displacement  $\geq$  30 L
  - **Emergency**
  - Fire pump
- ▶ Engine manufacturers must certify 2007 model year and later engine < 30 L/cylinder
  - EPA Certificate of Conformity
  - EPA Emissions Data Sheet

# NSPS JJJJ Emission Standards

## *Overview of Federal Regulations*

- ▶ Categories separated by
  - Engine type and fuel
  - Maximum engine power
  - Manufacture date
- ▶ Much more complex to make determination from regulation wording and/or tables due to various engine types
  - For example, “rich burn engines that use LPG” is an engine type
- ▶ Emergency engines
  - $25 < \text{HP} < 130$ ,  $\text{NO}_x + \text{HC}$  standard = 10 g/HP-hr and CO standard = 387 g/HP-hr
  - $\text{HP} \geq 130$ ,  $\text{NO}_x$  standard = 2 g/HP-hr, CO standard = 4 g/HP-hr, VOC standard = 1 g/HP-hr



# NSPS IIII/JJJJ Compliance Demonstration

## *Overview of Federal Regulations*

- ▶ Purchase engine certified to applicable standards
- ▶ Install, operate, and maintain the engine per manufacturer specifications/instructions
- ▶ For NSPS IIII, use only ultra low sulfur diesel (ULSD) which has a maximum sulfur content of 15 ppm
- ▶ Install a non-resettable hour meter prior to startup
- ▶ Record hours of operation and reason for operation (emergency and non-emergency)
  - Same hour requirements from RICE MACT

# Hours of Operation Requirements

## *Overview of Federal Regulations*

- ▶ No limit on emergency operation (some states use 300 or 500 hrs/yr total for permitting)
- ▶ Limited to 100 hr/yr of maintenance and testing
- ▶ Limited to 50 hr/yr of non-emergency operation which is part of 100 hr/yr maintenance and testing limitation
- ▶ What If An Emergency Engine Operates More Than The Allowable Non-Emergency Hours?
  - Based on EPA's Q&A document, it is then a non-emergency engine
  - Based on EPA's Response To Comments 10.2.1 published with the 2013 rule amendments, "case-by-case"
- ▶ If planning an outage that would exceed non-emergency hours for stationary engine, rent a portable engine and remove from site following outage

# Emergency or Not?

## *Overview of Federal Regulations*

- ▶ Scheduled downtime ▶ Not emergency
- ▶ Automatic operation to maintain pressure in sprinkler system ▶ Emergency
- ▶ Due to a leak ▶ Emergency
- ▶ Generator/engine system wiring fault (causing engine to run) ▶ Not emergency
- ▶ Unplanned transformer outage (automatic or manual) ▶ Emergency
- ▶ Planned outage by power supplier ▶ Not emergency (in most cases)
- ▶ Failure of battery backup ▶ Emergency
- ▶ Operation in anticipation of power outage (e.g. due to storm) ▶ Not emergency

# Engine Certification Documentation

## *Overview of Federal Regulations*

- ▶ Documentation should come with engine at purchase
- ▶ If not, can contact engine manufacturer with nameplate photos to get EPA Certificate of Conformity and associated Emissions Data Sheet
  - Some manufacturers have information available online
  - May be easiest to contact local dealer
- ▶ If only EPA Family/Certificate # and/or emissions data is needed, can find on “EPA Annual Certification Data for Vehicles, Engines, and Equipment”
  - <https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment>

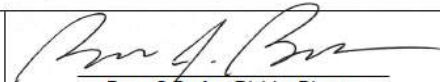


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**2014 MODEL YEAR**  
 CERTIFICATE OF CONFORMITY  
 WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION  
 AND AIR QUALITY  
 ANN ARBOR, MICHIGAN 48105

Certificate Issued To: KUKJE MACHINERY CO., LTD  
 (U.S. Manufacturer or Importer)  
 Certificate Number: EKMCL3.41D43-004

Effective Date:  
 12/16/2013  
 Expiration Date:  
 12/31/2014

  
 Byron J. Bunker, Division Director  
 Compliance Division

Issue Date:  
 12/16/2013  
 Revision Date:  
 N/A

Model Year: 2014  
 Manufacturer Type: Original Engine Manufacturer  
 Engine Family: EKMCL3 41D43

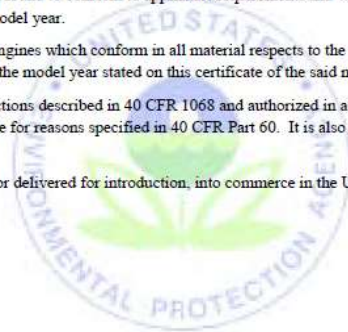
Mobile/Stationary Indicator: Stationary  
Emissions Power Category: 56<=kW<75  
Fuel Type: Diesel  
 After Treatment Devices: No After Treatment Devices Installed  
 Non-after Treatment Devices: No Non-After Treatment Devices Installed

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, 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 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 compression-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.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 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 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.



EPA  
 Certificate  
 of  
 Conformity

# STATEMENT OF EXHAUST EMISSIONS

## 2016 FPT DIESEL FUELED GENERATOR

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The measured emissions values provided here are proprietary to Generac and its authorized dealers. This information may only be disseminated upon request, to regulatory governmental bodies for emissions permitting purposes or to specifying organizations as submittal data when expressly required by project specifications, and shall remain confidential and not open to public viewing. This information is not intended for compilation or sales purposes and may not be used as such, nor may it be reproduced without the expressed written permission of Generac Power Systems, Inc. The data provided shall not be meant to include information made public by Generac.

### EPA Emissions Data Sheet

Generator Model:	<b>SD050</b>	EPA Certificate Number:	<b>GFPXL04.5DTD-002</b>
kW <sub>e</sub> Rating:	<b>50</b>	CARB Certificate Number:	<b>Not Applicable</b>
Engine Family	<b>GFPXL04.5DTD</b>	Emission Standard Category:	<b>Tier 3</b>
Engine Model:	<b>F4GE9455B*J</b>	Certification Type:	<b>Stationary Emergency CI</b>
Rated Engine Power (BHP)*:	<b>79</b>		<b>(40 CFR Part 60 Subpart IIII)</b>
Fuel Consumption (gal/hr)*:	<b>5.05</b>		
Aspiration:	<b>Turbocharged</b>		
Rated RPM:	<b>1800</b>		

\*Engine Power and Fuel Consumption are declared by the Engine Manufacturer of Record and the U.S. EPA.


**Emissions based on engine power of specific Engine Model.**  
**(These values are actual composite weighted exhaust emissions results over the EPA 5-mode test cycle.)**

CO	NOx + NMHC	PM	
1.30	5.30	0.34	Grams/kW-hr
1.00	3.20	0.25	Grams/bhp-hr

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

2007 Model Year Certificate of Conformity

Manufacturer: **JOHN DEERE POWER SYSTEMS OF DEERE AND COMPANY**  
 Engine Family: **7JDXL03.0063**  
 Certificate Number: **JDX-NRCI-07-32**  
 Intended Service Class: **NR 4 (37-75)**  
 Fuel Type: **DIESEL**  
 FELs: g/kW-hr NMHC+NOx: N/A NOx: N/A PM: N/A  
 Effective Date: **12/18/2006**  
 Date Issued: **DEC 18 2006**

	JOHN DEERE POWER SYSTEMS OF DEERE	EXECUTIVE ORDER U-R-004-0273 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2007	7JDXL03.0063	2.4, 3.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Smoke Puff Limiter, Turbocharger			Loader, Tractor, Pump, Compressor, Generator Set, Other Industrial Equipment	

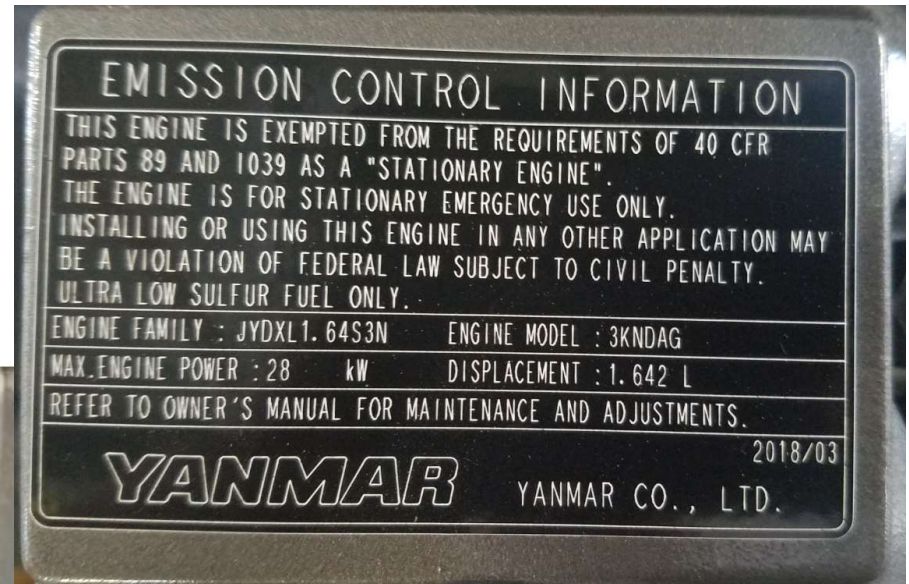
The engine models and codes are attached.

The following are the exhaust certification standards (STD), and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr); and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ kW < 75	Tier 2	STD	N/A	N/A	7.5	5.0	0.40	20	15	50
		CERT	-	-	6.9	1.9	0.34	4	5	6

# EPA Emissions Data Sheet

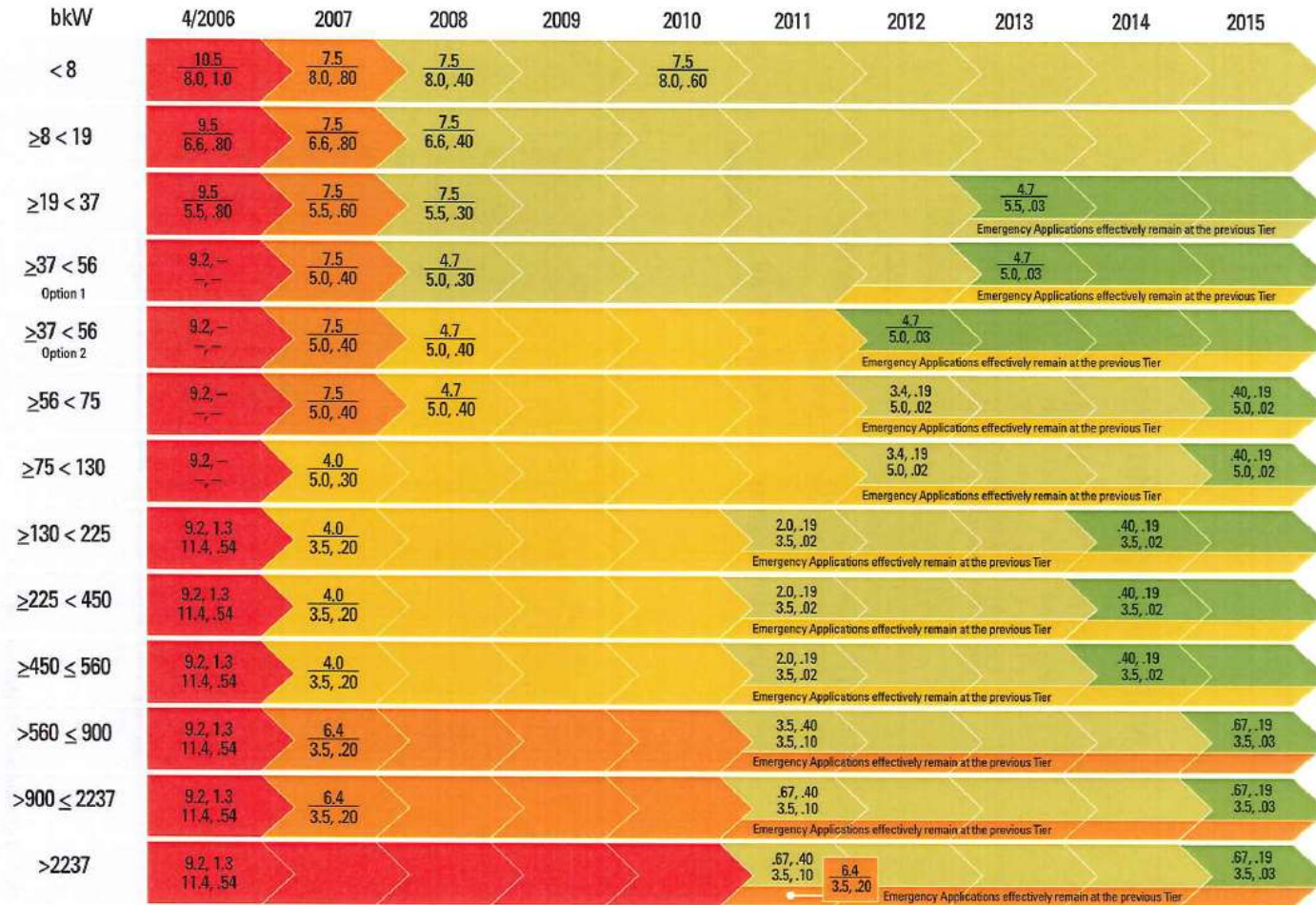
# Nameplate Photos





# EPA Stationary Diesel Genset Emissions Limits and Timing

(engines < 10 liters per cylinder)



NO<sub>x</sub>, HC  
CO, PM or NO<sub>x</sub>+HC  
CO, PM g/kW-hr

● Tier 1 ● Tier 2 ● Tier 3 ● Tier 4 Interim ● Tier 4 Final

<http://www.cat.com/technology/tier-4>

# Example

## *Overview of Federal Regulations*

### Data Available

- ▶ 150 output horsepower engine
- ▶ Manufacture date October 2015
- ▶ Ordered November 2015
- ▶ To be installed December 2016
- ▶ Emergency use only
- ▶ Gasoline fired
- ▶ Major source of HAP
- ▶ Stationary engine

### Regulatory Determination Options

- A. Existing source under RICE MACT, not subject to NSPS JJJJ
- B. New source under RICE MACT, required to comply with NSPS IIII
- C. New source under RICE MACT, required to comply with NSPS JJJJ
- D. New source under RICE MACT, required to comply with both RICE MACT and NSPS IIII
- E. No applicable requirements

# Potential Air Permitting Implications

*Varies State by State*

- ▶ Each state varies in how it regulates emergency generator engines through permitting
  - Exemptions even up to 1,000+ kW units
  - Permitting just like any other emissions source if engine is subject to NSPS/NESHAP (most are)
  - Somewhere in between
- ▶ Regardless of permit status, must maintain compliance with federal regulations
  - Sometimes having conditions written into permits makes it easier to understand compliance obligations

# Potential Air Permitting Implications

## Kentucky

- ▶ At least registration or a significant emission unit in existing permit if subject to NSPS/NESHAP
- ▶ Registration now requires same air permitting forms as more major permit types
- ▶ No fee associated with application
- ▶ Construction authorization varies by permit type
- ▶ May be included in annual emissions fees depending on source type

# Potential Air Permitting Implications

## Ohio

- ▶ Exempt entirely if less than 50 HP
- ▶ Permit-by-rule (PBR) option available regardless of source type
- ▶ 1 page form indicating fuel type and engine HP or generator kW
- ▶ No fee associated with application
- ▶ Construction authorization upon submittal of PBR form
- ▶ Some local air agencies do collect annual fees

# Potential Air Permitting Implications

## Indiana

- ▶ State has jurisdiction over permitting as well as 2 local cities (Evansville, Hammond)
- ▶ Diesel emergency generator less than 1,600 HP are exempt
- ▶ Hammond
  - Permit to Construct and Certificate of Operation
  - Permit expires and renewal is due 90 days prior
  - Does collect fees
- ▶ Evansville
  - Exempt as long as not operated more than 500 hr/yr

# Compliance Best Practices

- ▶ Know Federal category for each engine
  - RICE MACT – existing engines
  - NSPS IIII – diesel engines
  - NSPS JJJJ – natural gas/propane/gasoline engines (4S vs 2S, RB vs LB)
- ▶ Engine NSPS certifications
  - Ensure new engines are certified to the proper NSPS (or state) standards
  - Obtain documentation of the engine's certification from the vendor (specifications, contract, warranty, etc.)
  - Obtain and keep a copy of the EPA Certificate of Conformity
  - Most certified engines have a nameplate – take pictures for your records
- ▶ Manufacturer's procedures
  - Obtain an operations and maintenance manual if possible
  - Obtain recommended maintenance procedures – and follow them

# Compliance Best Practices

- ▶ Fuel delivery receipts
  - Must demonstrate the fuel oil meets applicable sulfur limits
  - Review documentation received from the supplier – ask for additional details if needed
- ▶ Maintenance records
  - Develop a maintenance schedule and stick to it
  - Keep detailed records of preventive maintenance, corrective maintenance and parts replacements
- ▶ Permits
  - Know what's in your permit if applicable
  - Keep all permits so they are available onsite (can be stored electronically)



# Compliance Best Practices

- ▶ When first purchased
  - Take pictures of nameplates
  - Scan in all documentation received with unit including purchase receipt with date
- ▶ Operation records
  - Create a form to be filled out each time the engine is operated
    - ◆ Date, time and duration of operation
    - ◆ Hour meter before / after reading
    - ◆ Reason for operation (e.g., monthly load test, power failure, etc.)
      - If engine runs due to an emergency, fill out form after the fact
    - ◆ Amount of fuel consumed
  - Create a method (e.g., Excel or EMIS) to track operation
    - ◆ Track hours of operation per month
    - ◆ Track hours of operation on a 12-month rolling basis
    - ◆ Calculate and track emissions (if needed)

# Compliance Best Practices

- ▶ Keep track of all engines onsite and proposed – develop an inventory of **all** engines and maintain it
  - Temporary/Rental Engines
    - ◆ State may not have temporary source provisions
    - ◆ Nonroad engines onsite for > 12 months are no longer nonroad engines
    - ◆ Are portable engines being used as stationary engines?
  - New Project Designs
    - ◆ The permitting effort focus may be on higher-emitting new sources, but many large capital projects also include additional ancillary emergency engines
- ▶ Review state waste regulations with respect to used oil from engine maintenance. How does your site dispose of used oil?
- ▶ Fuel storage tanks need to be in SPCC Plan/SWPPP
- ▶ Some states require registration for fuel storage tanks

## Conclusions

- ▶ Confirm that all engines subject to NSPS IIII or NSPS JJJJ are certified
- ▶ Facility responsible for maintaining copy of certification for each engine
- ▶ Confirm using ultra-low sulfur diesel in all CI engines
- ▶ Revalidate engine inventory
  - Especially keeping log of any nonroad engines to ensure they do not become stationary
- ▶ Ensure all operational and maintenance records are readily available

## Disclaimer: Ours is a dynamic field



*Always be certain to obtain the latest regulations, forms, and guidance from the appropriate regulatory authorities before determining regulatory applicability, permitting, and compliance needs for your facilities. The information provided in this manual, while up-to-date when printed, is subject to change as regulatory authorities update forms, policies, and regulations. You are encouraged to use this manual as an educational reference, but it is not a substitute for independent research and verification, and the application of sound professional judgment and analysis in real-time permitting and compliance situations.*

# Questions?

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Robin is a partner in the Lexington office where she focuses her practice on environmental law issues that arise regarding permitting and compliance with the Clean Air Act, Clean Water Act, the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Robin has represented various entities, including utilities and manufacturing companies, in maintaining compliance with environmental laws. In a complex and ever-evolving regulatory environment, she is up to date on all current permitting issues and requirements. She is experienced in working with state and local environmental permitting agencies.

Robin's experience with regulatory agencies gives her a unique perspective as she works with clients to address their needs. She served as an attorney with the Kentucky Energy and Environment Cabinet, where she represented the Kentucky Divisions of Waste and Water, and she served as the lead attorney for the Kentucky Division for Air Quality, where she handled compliance, permitting and programmatic matters.

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