

## EPA Tier 4 Regulations for Diesel Generators

### Federal EPA Tier 4 Resources:

- Final EPA Rule Fact sheet (short form) link: [EPA Final Rule Fact Sheet](#)
- Final EPA ruling (long form) on the *National Emission Standards for Hazardous Air Pollutants* (NESHAP) for *Reciprocating Internal Combustion Engines* (RICE) link: [EPA Final Rule - Existing Engines](#)
- Final EPA ruling (long form) for RICE link: [EPA Final Rule - New Engines \(2006\)](#)

### Background:

- As the result of the Clean Air Act (1970), the Environmental Protection Agency (EPA) began setting standards for diesel engine emissions beginning with mobile “on-highway” engines.
- In 1990, the Clean Air Act was amended with a focus on specific pollution criteria include some of the following: Nitrogen Oxide (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), ozone, and particulate matter (PM).
- In 1996, the EPA adopted the first set of emissions standards referred to as Tier I.
- In 1998, more stringent Tier 2 standards were adopted by the EPA.
- Between years 2005–2008, Tier 3 standards were phased into implementation.
- In 2008, Tier 4 standards began phased implementation.
- In December 2008, the D.C. Court of Appeals ruled that EPA emissions standards must address all phases of operation including engine startup, shutdown, and malfunction.
- In February 2010, the EPA issued a final rule on emissions standards for diesel stationary reciprocating internal combustion engines (RICE).
- It is estimated that Tier 4 Final compliant engines will produce over 90% less NO<sub>x</sub> and over 90% less particulate matter (PM) when compared with Tier 1 engines.

### Tier 4 Regulation Summary:

- On January 1, 2011, Tier 4 *Interim* (T4i) standards went into effect.
- Tier 4 *Final* standards require additional reductions in emissions. Implementation deadlines are phased in between 2013 and 2015. Deadlines depend on engine size.
- Existing engines constructed prior to a certain date, depending on the engine size, are required to install emissions treatment equipment and perform testing.

- The Tier 4 emissions standards apply to engines for EPA defined non-emergency stationary applications. Generators classified as emergency standby are exempt from Tier 4 Standards regarding emissions but are limited in the amount of time they can operate in a non-emergency situation such as testing or maintenance.
- Generators classified as EPA defined emergency stationary application have additional maintenance and record-keeping requirements.
  - An example of a non-emergency stationary application would be producing power for normal operations of a facility or supplying power to an electric grid for utility peak shaving.
  - An example of EPA defined emergency stationary application would be for producing power for critical networks or equipment when electric power from the normal source is interrupted.
- *Please Note:* State or local regulations may further restrict allowances on emergency standby use. Check with State and local air boards for recent interpretations.

### **Sample Power Generation Facilities Response:**

- Some facilities purchased Tier 2 equipment during this past year with plans to install the units within the next 2 years, prior to Tier 4 Final deadlines, and then retire older engines.
- Some facilities have already installed Tier 2 equipment this last year or are currently in the process of completing construction or installation and intend to retire their older engines.
- Some facilities are reviewing changing classification to an EPA defined emergency stationary application from a non-emergency stationary class.
- Some facilities are planning to install necessary emissions after-treatment equipment on their older engines to bring them into Tier 4 compliance.
- Some facilities have delayed action pending a review of standards enforcement.

### **Additional Vendor Resources:**

- [Caterpillar \(www.cat.com\)](http://www.cat.com)
- [Cummins \(www.cumminspower.com\)](http://www.cumminspower.com)
- [Fairbanks Morse \(www.fairbanksmorse.com\)](http://www.fairbanksmorse.com)