

Caterpillar Emissions Solutions

RICE NESHAP Final Rule for Existing Diesel Stationary Engines Frequently Asked Questions (FAQ) – April 2010

- **What does the “RICE NESHAP Final Rule (40 CFR Part 63)” mean to my engine?**
 - As an owner or operator, if you own an existing stationary diesel engine that is classified as a stationary source, you will have new requirements for your engine. Depending on the engine’s horsepower and where it is sited, these could include:
 - CO limit or CO reduction that could force the use of an oxidation catalyst
 - Monitoring device to continuously measure pre/post back-pressure and exhaust temperature for an engine requiring a catalyst
 - Limitations on the startup time
 - Performance tests to demonstrate engine emissions compliance
 - Mandatory maintenance requirements
 - ULSD usage requirements
 - Mandatory open or closed crankcase ventilation system
 - Please refer to the **CES NESHAP Fact Sheet** for more information.
- **Who is affected by this rule?**
 - Almost all new stationary engines are already regulated in some fashion by the NESHAP.
 - The latest changes primarily affect existing stationary engines:
 - Diesel engines >500 HP, located at a major source installed before Dec 19th, 2002 are considered existing engines.
 - Diesel engines ≤500 HP, located at a major source or diesel engines of any size at an area source installed before June 12th, 2006 are considered existing engines.
- **What about SI engines?**
 - Existing SI engines are to be regulated by NESHAP changes which are due to be published August 2010. Similar communications will follow at that time.
- **What is a “Major” Source?**
 - A Major Source is defined as any site exceeding 10 tons per year of any single HAP or 25 tons per year of all HAPs combined. Otherwise the source is considered an “area” source.
- **What is an “Area” Source?**
 - An area source is any source that is not a major source.
- **How will performance of these technologies be confirmed if verification is not required?**
 - For many existing engines, owners and operators will be expected to demonstrate compliance through periodic performance tests, monitoring, development of maintenance plans and record keeping.
- **Emergency engines are exempt, what is classified as “emergency”?**

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- Except for existing emergency engines >500 HP at major sources, stationary emergency engines are not exempt from the NESHAP. They have some level of NESHAP requirements, although it is less than for non-emergency engines.
- New stationary emergency engines must comply with the NSPS definition and restrictions for emergency engines, which effectively means limited running for required testing and maintenance, and unlimited running when normal source or utility power fail. Other operation is prohibited.
- Existing emergency engines have a newly defined definition in the latest NESHAP changes. This definition and associated restrictions are similar to those for new emergency engines, but also allow some limited discretionary running outside of testing, maintenance, and loss of primary power. 40CFR63.6640(f) should be consulted for more details.

- **Is there an EPA accepted definition for “non-emergency”?**
 - Any engine that is not classified as “emergency”.

- **What retrofit technologies will meet the HAPS requirements?**
 - Typically the DOC (Diesel Oxidation Catalysts) is the preferred technology for CO emission reduction on diesel engines.

- **What is the impact on operating cost?**
 - There is very little impact on operating cost beyond standard replacement of substrates and monitoring systems based on manufacturer’s guidelines.

- **Will the normal engine crankcase breather “hat” that comes standard from Cat on a 3516 constitute an “open CV system” or are there specific EPA definitions on how much filtration/efficiency is required?**
 - EPA does not specify filtration efficiency percentage for open or closed crankcase ventilation systems as part of the RICE NESHAP regulation. Caterpillar believes that the breather “hat” would meet the definition of an open CV system, but ultimately owners will need to confirm this with their local permitting administrator.

- **Will all stationary dual fuel engines that operate CI (without spark plugs) that fall into the listed categories be required to meet this regulation or are they somehow exempt?**
 - Dual fuel CI engines are not exempt, and would have to meet the same requirements as other CI engines.

- **Will Caterpillar offer a 3516A/B DOC “kit”?**
 - Caterpillar does not offer a DOC retrofit kit at this time.
- **How much HAPs does a 3516a/b put out (pounds per hp per hour)?**
- **Customers want to know if they are considered major or area sources...would 3 x 3516s be major? 4? 5? ...#/hp-hr @ full load would be helpful**
 - Major or area source classifications are engine and site specific. Please check your local permit requirements, or work with the local Cat dealer to determine exhaust emissions values from Cat TMI data or the ASC to determine your engine emissions values.

- **Are customers required to replace old fuel tanks/systems to ensure the leached sulfur doesn’t leach back into the ULSD?**
 - Please check with your local governmental officials responsible for fuel storage. Caterpillar is not qualified to answer this question.

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- **What constituents does the 25TPY include?**
 - Combined HAPs on a site over 25 tons per year, or 10 tons of any single HAP, trigger a major source determination. Examples of HAPs identified by EPA as potentially being present in engine exhaust include: 1,3-butadiene, acetaldehyde, acrolein, benzene, ethylbenzene, formaldehyde, n-hexane, naphthalene, PAH, polycyclic organic matter, styrene, toluene, xylene, cadmium, chromium, lead, manganese, mercury, nickel, and selenium. Many of these would be trace amounts in an engine's exhaust. Typically formaldehyde will be the largest contributor for diesel engines, and likely the biggest concern between the owner and the permitting agency. Owners will need to work with their permitting agency on the determination of Major sources.

Note: Criteria pollutants such as CO, NO_x and PM are not HAPs.

- **Is Major source defined a PTE 10/25 TPY CO/HAP based on permitted hours, or is it 10/25 TPY actual CO/HAP emissions of the previous year?**
 - Please check with your local permitting agency or permit documentation for guidance in this area. Note that CO is not a HAP.
- **Is there any indication of how rigorous and extensive the future policing process will be...who, and how will they police this program for all these units? EPA, local air board?**
 - Please check with your local EPA office or local air board for enforcement guidelines.
- **Why are the 23ppm & 70% CO reduction the same for both major and area sources...if there is no difference, why delineate between the two source types?**
 - EPA has different criteria that it considers when setting major and area source limits. Sometimes it turns out that the compliance solution can be the same for similarly sized engines at both major and area sources, but this is not always the case. For instance, existing CI non-emergency engines between 300 and 100 HP have to meet specific CO limits at major sources, while the same engines at an area source would not.
- **On the handout, Cat mentions area sources...are pre 2003 or pre-2006 engine affected?**
 - The latest changes to the NESHAP primarily regulate **existing** diesel engines.
 - Diesel engines >500 HP, located at a major source installed before Dec 19th, 2002 are considered existing engines.
 - Diesel engines ≤500 HP, located at a major source or **diesel engines of any size at an area source installed before June 12th, 2006 are considered existing engines.**
- **Do any Caterpillar engines that fall within the “over 300 bhp and non-emergency” category meet the tailpipe emissions standard without an oxycat? If yes, is there a list of these engines available?**
 - Some Cat engines in this category may meet the emissions values set forth in the regulation without the use of an oxidation catalyst. It depends on the particular engine and site situation. A list of engines is currently unavailable. Please work with the local Caterpillar dealer to determine the exhaust emissions values from Cat TMI data or the ASC to determine your engine emissions values.
- **Does every engine need to be source tested to see if it currently meets the standard or can info from TMI be used to make the determination?**

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- Not every engine has a source test requirement. Emergency engines of all sizes, and existing non-emergency engines less than 100 hp at major sources and less than 300 hp at area sources, do not require testing. For existing engines that do require testing, there is no language that Caterpillar is aware of in the NESHAP that specifically allows the use of factory data in lieu of onsite testing. However, check with your local permitting authorities; they may find a way to allow this in certain instances.

○ What are the initial performance testing requirements ?

- Initial performance tests must be performed on every engine greater than 100 HP at a major source or greater than 300 HP at an area source. For those greater than 500 HP, recurring tests are also required during the lesser of every 3 years (or 5 years for limited use engines at area sources), or 8760 hours.