EMISSIONS REDUCTION REQUIREMENTS BY APPLICATION

EPA Regulations and New Source Performance Standards (NSPS) Tier 4 Definitions

CAT®

It can be challenging for customers in today's electric power industry. In years past the manufacturers were required to ensure products we delivered met the EPA regulations, and our customers took responsibility for local site permitting requirements. However, as we enter the NSPS Tier 4 regulatory environment, it is more important than ever for end users to understand current regulations and how the products they purchase are allowed to operate. A few of the key factors that customers should ensure they understand are the EPA definition of "emergency", what constitutes a Tier 4 certified package, and what their local regulations require.

The EPA has set unique emissions standards for stationary "emergency-only" engines. Emergency installations are those that operate only during an emergency, such as the loss of a normal power source like the utility or the grid. 40 CFR 60.4219 describes some examples of allowable emergency operation. There is no restriction on the number of hours that an emergency installation may run under true emergency conditions, but the EPA regulation only allows operators to run their emergency gensets for 100-hours per year for maintenance and exercise purposes. Additionally, the EPA has recently published regulatory revisions, which allow stationary emergency gensets to operate for up to 50-hours per year of non-emergency running, such as for storm avoidance. This 50-hour allowance must count towards the 100-hour annual maintenance and testing allowance. The EPA does not allow stationary emergency gensets to run as part of a utility Demand Response Program, or for peak shaving purposes. It is important that customers understand these distinctions since they are responsible for the proper application of products they purchase.

For additional information or clarification, contact your Cat® Dealer: www.cat.com/dealer-locator

The following sections of the EPA regulation (40 CFR Part 60) describe, in part, the compliance requirements for owners and operators of stationary engines, as well as the definition of an emergency-only stationary engine. For additional information: www.epa.gov

EPA REGULATION

§60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

… (c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) … you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum … engine power. The engine must be installed and configured according to the manufacturer's specifications.

…(f) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100-hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100-hours per year. Emergency stationary ICE may operate up to 50-hours per year in non-emergency situations, but those 50-hours are counted towards the 100-hours per year provided for maintenance and testing. The 50-hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50-hours per year, as permitted in this section, is prohibited.

§60.4219 What definitions apply to this subpart?

… Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

The EPA requires most products, less than 10 L/cyl, to be Tier 4 certified in order to operate in any form of non-emergency service. A comparison of Tier 4 certified and a stationary emergency-only application is provided in the included table.

Although the EPA regulations set out alternative emissions standards for stationary emergency gensets, which allow the continued use of Tier 2 and Tier 3 engine technologies, state and local regulatory authorities can dictate stricter regulated limits - which may require the use of retrofit aftertreatment solutions. Even if such modifications reduce a genset's emissions to less than the NSPS Tier 4 regulated limits, the certification status of the engine is unchanged and its operation is still limited to the emergency situations described previously.

Emissions Reduction Technology: Application Guide

	Tier 4 Certified	"Stationary Emergency-Only" with after-market SCR	"Stationary Emergency-Only"
Suitable Applications	Customers who desire to operate in non-emergency applications and/or operate in an emergency manner but need lower emissions to meet more stringent local air permit requirements.	Customers who operate in an emergency manner but need lower emissions to meet more stringent local air permit requirements.	Emergency applications.
Equipment	The engine manufacturer undertakes the certification of Tier 4 engines. Gensets for non-emergency applications require these manufacturer designed and certified engines.	3rd party vendors & distributors can retrofit "emergency" (Tier 2/3) labeled equipment with aftermarket catalyst products to meet the emissions output levels required by the customer, but limited to operation as defined by the EPA's definition of emergency.	These products meet Tier 2 or 3 standards for the applicable horsepower category and are limited to operation as defined by the EPA's definition of emergency.
Allowable Use	Equipment may be operated consistent with the engine and equipment manufacturers' operations and maintenance instructions without any hour limits established by federal requirements. Local permitting/restrictions should be consulted to determine if more stringent requirements must be met.	Equipment is limited to "emergency" operation as outlined by the EPA regulations. Local permitting/restrictions should be consulted to determine if more stringent requirements must be met.	Equipment is limited to "emergency" operation as outlined by EPA regulations. Local permitting/restrictions should be consulted to determine if more stringent requirements must be met.
Useful Life	Product is certified to meet emission standards during the EPA's definition of useful life (10 years or 8,000 hours).	Engine is certified to meet emission standards during the EPA's definition of useful life (10 years or 8,000 hours). Retrofitted aftertreatment has no federal certification or performance requirements. Local requirements should be consulted.	Product is certified to meet emission standards during the EPA's definition of useful life (10 years or 8,000 hours).
In-Use Restrictions	The EPA requires an inducement strategy for certified engines, which limits equipment operation in the event certain situations arise.	To be determined by the local air quality governing body with jurisdiction over stationary engine emergency applications.	To be determined by the local air quality governing body.

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