



# Technical Highlights

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## Applicability of Locomotive Emission Standards

*In 1998, the U.S. Environmental Protection Agency (EPA) promulgated final emission standards for oxides of nitrogen (NO<sub>x</sub>), hydrocarbons (HC), carbon monoxide (CO), particulate matter (PM) and smoke for newly manufactured and remanufactured locomotives and locomotive engines. The requirements for compliance with these emission standards are described in 40 CFR Part 92. This fact sheet provides an overview of the applicability of these regulations. You should consult the regulations contained in 40 CFR Part 92 for a complete description of the applicability.*

### General Applicability

In general, the provisions of 40 CFR Part 92 apply to manufacturers, remanufacturers, owners and operators of:

- Locomotives and locomotive engines manufactured on or after January 1, 2000; and
- Locomotives and locomotive engines manufactured on or after January 1, 1973 and remanufactured on or after January 1, 2000.

However, locomotives that were originally manufactured between January 1, 1973, and December 31, 1989, do not need to be brought into compliance until they are remanufactured on or after January 1, 2002.

Also, locomotives that were originally manufactured between January 1, 1990, and December 31, 1999, may not need to be brought into compliance when remanufactured before January 1, 2002, depending upon the availability of a certified remanufacturing system. The phase-in of these requirements is shown in more detail in the table below. Owners may also opt to have their older (i.e., pre-1973) locomotives covered by these regulations by upgrading them into a certified configuration. Such locomotives would then be subject to these regulations for the remainder of their service lives, and thus, would be subject to these emission standards at each subsequent remanufacture.

There are three sets (or tiers) of emission standards. The Tier 0 standards apply only to locomotives originally manufactured before 2002. The Tier 1 standards apply to locomotives manufactured in 2002-2004, and the Tier 2 standards apply to locomotives manufactured in 2005 and later. The applicability of the Tier 1 and Tier 2 standards is based on the date of manufacture of the locomotive, rather than the engine. Thus, a newly manufactured engine in 2005 that is used to repower a 1990 model year locomotive would be subject to the Tier 0 emission standards, which are also applicable to all other 1990 model year locomotives.

**Phase-in of Compliance Requirements  
By Locomotive Type and Year of Manufacture**

Calendar Years	Locomotive Type	Year of Original Manufacture	Certified System Available?	Compliance Required?
2000	Freight	1973-1989	NA*	No
	Freight	1990-1999	Yes	Yes
	Freight	1990-1999	No	No
	Freight	2000	NA*	No**
	Passenger	1973-2000	NA*	No
2001	Freight	1973-1989	NA*	No
	Freight	1990-1993	Yes	Yes
	Freight	1990-1993	No	No
	Freight	1994-2001	NA*	Yes**
	Passenger	1973-2001	NA*	No
2002-2006	Freight	1973-2006	NA*	Yes
	Passenger	1973-2001	NA*	No
	Passenger	2002-2006	NA*	Yes
2007	Freight	1973-2007	NA*	Yes
	Passenger	1973-2007	NA*	Yes

\* Availability criteria not applicable to this category.

\*\* See §92.12(a)(3) for details about a one-year exemption that is available for new models originally manufactured in 2001. This exemption requires that existing models comply with the Tier 0 standards in 2000.

## **Exclusions and Exemptions**

There are certain types of locomotives that are excluded from these regulations. First, all locomotives powered solely by an external source of electricity, and all historic steam-powered locomotives are excluded from these regulations. These locomotives are also not currently regulated elsewhere by EPA. The regulations do not apply to existing locomotives owned by railroads that are classified as small businesses, as defined below, because these locomotives are not considered to be new locomotives when remanufactured.

EPA is also excluding from these requirements some smaller engines that are more typically used in other nonroad equipment. Engines used in locomotive-type vehicles that are powered by less than 750 kilowatts (kW) (1006 horsepower) total power and engines that are used in self-propelled railcars are excluded from these regulations. Such vehicles are not considered to be locomotives under the definitions of 40 CFR Part 92. For example, a locomotive-type vehicle propelled by a single 700 kW engine (or two 350 kW engines) would not be subject to these regulations, while a locomotive-type vehicle propelled by a single 800 kW engine (or two 400 kW engines) would be subject to these regulations. Similarly, engines used in self-propelled passenger railcars are excluded from these regulations. Such railcars are distinguished from locomotives by the fact that they are designed specifically to carry passengers in the propulsion vehicle. Locomotive engines which provide only hotel (or head-end) power are also excluded from these regulations. Diesel engines used in excluded locomotive-type vehicles, used in railcars, or which provide only hotel power are subject to the requirements of 40 CFR Part 89.

EPA has created special provisions for regulating passenger locomotives, primarily because of the low production volumes. Newly manufactured passenger locomotives will not be required to comply with the emission standards until January 1, 2002. Remanufactured passenger locomotives (other than those originally manufactured on or after January 1, 2002) will not be required to comply with the emission standards until remanufactured on or after January 1, 2007.

Subparts I and J of 40 CFR Part 92 provide for other temporary and permanent exemptions from these regulations.

## **Definition of Small Railroads**

Line-haul railroads with fewer than 1500 employees and switch railroads with fewer than 500 employees are classified as small railroads. For railroads owned by parent companies, the number of employees used to determine small business status is the combined number of employees of the railroad and any parent companies.

## **For More Information**

Additional documents on locomotive exhaust emission standards are available electronically from the EPA Internet server at:

<http://www.epa.gov/oms/locomotv.htm>

For further information on compliance with these regulations, please contact the locomotive certification contact at:

U.S. Environmental Protection Agency  
Office of Mobile Sources (6403J)  
401 M Street SW  
Washington, DC 20460

