

40 C.F.R. § 1033.101

Exhaust emission standards.

See appendix A of this part to determine how emission standards apply before 2023.

(a) *Emission standards for line-haul locomotives.* Exhaust emissions from your new locomotives may not exceed the applicable emission standards in Table 1 to this section during the useful life of the locomotive. (Note: § 1033.901 defines locomotives to be “new” when originally manufactured and when remanufactured.) Measure emissions using the applicable test procedures described in subpart F of this part.

Table 1 to § 1033.101—Line-Haul Locomotive Emission Standards

Year of original manufacture	Tier of standards	Standards (g/bhp-hr)			
		NO _x	PM	HC	CO
1973–1992 ^a	Tier 0 ^b	8.0	0.22	1.00	5.0
1993 ^a –2004	Tier 1 ^b	7.4	0.22	0.55	2.2
2005–2011	Tier 2 ^b	5.5	^e 0.10	0.30	1.5
2012–2014	Tier 3 ^c	5.5	0.10	0.30	1.5
2015 or later	Tier 4 ^d	1.3	0.03	0.14	1.5

^a Locomotive models that were originally manufactured in model years 1993 through 2001, but that were not originally equipped with a separate coolant system for intake air are subject to the Tier 0 rather than the Tier 1 standards.

^b Line-haul locomotives subject to the Tier 0 through Tier 2 emission standards must also meet switch standards of the same tier.

^c Tier 3 line-haul locomotives must also meet Tier 2 switch standards.

^d Manufacturers may elect to meet a combined NO_x + HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NO_x and HC standards, as described in paragraph (j) of this section.

^e The PM standard for newly remanufactured Tier 2 line-haul locomotives is 0.20 g/bhp-hr until January 1, 2013, except as specified in § 1033.150(a).

(b) *Emission standards for switch locomotives.* Exhaust emissions from your new locomotives may not exceed

the applicable emission standards in Table 2 to this section during the useful life of the locomotive. (Note: § 1033.901 defines locomotives to be “new” when originally manufactured and when remanufactured.) Measure emissions using the applicable test procedures described in subpart F of this part.

Table 2 to § 1033.101—Switch Locomotive Emission Standards

Year of original manufacture	Tier of standards	Standards (g/bhp-hr)			
		NO _x	PM	HC	CO
1973–2001	Tier 0	11.8	0.26	2.10	8.0
2002–2004	Tier 1a	11.0	0.26	1.20	2.5
2005–2010	Tier 2 a	8.1	^b 0.13	0.60	2.4
2011–2014	Tier 3	5.0	0.10	0.60	2.4
2015 or later	Tier 4	^c 1.3	0.03	^c 0.14	2.4

^a Switch locomotives subject to the Tier 1 through Tier 2 emission standards must also meet line-haul standards of the same tier.

^b The PM standard for new Tier 2 switch locomotives is 0.24 g/bhp-hr until January 1, 2013.

^c Manufacturers may elect to meet a combined NO_x + HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NO_x and HC standards, as described in paragraph (j) of this section.

(c) *Smoke standards.* The smoke opacity standards specified in Table 3 to this section apply only for locomotives certified to one or more PM standards or FELs greater than 0.05 g/bhp-hr. Smoke emissions, when measured in accordance with the provisions of Subpart F of this part, shall not exceed these standards.

This document is only available to subscribers. Please [log in](#) or [purchase access](#).

[Purchase Login](#)