Owner/Operator Guidance Document

for the

NSPS for Stationary Compression Ignition Internal Combustion Engines

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Disclaimer

This guidance is not a legally binding document, and is not meant to replace the published regulation titled "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Final Rule (*Federal Register*, July 11, 2006, beginning on page 39154). This document presents specific aspects of the regulation and does not cover all parts of the regulation. This document is an elaboration of the appropriate legal document, and the final authority rests solely in the legal document.

1.0 Introduction

New source performance standards implement section 111(b) of the CAA, and are issued for categories of sources which cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. The final new source performance standards (NSPS) for stationary compression ignition (CI) internal combustion engines were published on July 11, 2006 (71 FR 39154). The standards apply to new, modified and reconstructed stationary CI engines. The standards regulate emissions of nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), and hydrocarbons (HC) from these sources.

While new stationary CI engines are certified by manufacturers to the exhaust standards set forth in the CI NSPS, the regulation adopted not-to-exceed limits (NTE) that apply to these same engines while in-use. In other words, when required to test, owners and operators have to meet the NTE limits. This document summarizes those NTE limits.

The purpose of this document is to provide affected owners and operators of stationary CI engines with the specific NTE limits that sources may be subject to depending on the engine model year, size, class, or other distinction made in the rule. The information provided in this document will assist owners and operators in determining which specific NO_x, CO, PM, and HC exhaust emission limits apply to their stationary CI engine(s) and are intended to simplify the compliance process. Some of the standards summarized in these tables have exceptions, special cases, interim and other provisions, including optional and alternative standards that are not reflected in these tables; nor do the tables reflect other requirements included in the regulations.

2.0 Emission Standards

Tables 1 through 5 show the numerical exhaust emission standards that owners and operators of in-use stationary CI engines are subject to based on the applicability criteria set forth in 40 CFR §60.4200 of the rule. The emission standards applicable to owners and operators of stationary CI engines are presented in 40 CFR §60.4204 and §60.4205 of the rule with the specific testing requirements that are applicable presented in 40 CFR §60.4212.

Table 1. Owner/Operator Emission Standards for Stationary Pre-2007 MY <10 l/cyl and 2007-2010 MY Engines >2,237 KW and <10 l/cyl

Maximum Engine Power	Emission Standards in g/KW-hr									
	NMHC + NO_x		HC		NO_x		CO		PM	
	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard
KW<8 (HP<11)	10.5	13.1	-		-		8.0	10.0	1.0	1.3
8≤KW<19 (11≤HP<25)	9.5	11.9	-		-		6.6	8.3	0.8	1.0
19≤KW<37 (25≤HP<50)	9.5	11.9	-		-		5.5	6.9	0.8	1.0
37≤KW<56 (50≤HP<75)	-		-		9.2	11.5	-		-	
56≤KW<75 (75≤HP<100)	-		-		9.2	11.5	-		-	
75≤KW<130 (100≤HP<175)	-		-		9.2	11.5	-		-	
130≤KW<225 (175≤HP<300)	-		1.3	1.6	9.2	11.5	11.4	14.3	0.54	0.68
225≤KW<450 (300≤HP<600)	-		1.3	1.6	9.2	11.5	11.4	14.3	0.54	0.68
450≤KW≤560 (600≤HP≤750)	-		1.3	1.6	9.2	11.5	11.4	14.3	0.54	0.68
KW>560 (HP>750)	-		1.3	1.6	9.2	11.5	11.4	14.3	0.54	0.68

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. The NTE multiplier for each pollutant is 1.25.
[2]MY is model year.

Table 2. Owner/Operator Emission Standards for Stationary CI Engines 10≤l/cyl≤30

Model Year, Engine Size l/cyl, Rated Power,	Emission Standards in g/KW-hr					
	THC + NO_x (NO_x only for pre-2007 MY)		CO		PM	
	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard
Pre-2007 MY						
MTS<130	17.0	21.3				
130≤MTS<2,000	45.0 * $MTS^{-0.20}$	56.3 * $MTS^{-0.20}$				
MTS≥2,000	9.8	12.3				
2007+ MY						
10.0≤disp<15.0 all power levels	7.8	9.8	5.0	6.3	0.27	0.34
15.0≤disp<20.0 power <3,300 KW	8.7	10.9	5.0	6.3	0.50	0.63
15.0≤disp<20.0 power ≥3,300 KW	9.8	12.3	5.0	6.3	0.50	0.63
20.0≤disp<25.0 all power levels	9.8	12.3	5.0	6.3	0.50	0.63
25.0≤disp<30.0 all power levels	11.0	13.8	5.0	6.3	0.50	0.63

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. The NTE multiplier for each pollutant is 1.25. For engines in engine families that participated in the averaging, banking and trading (ABT) program under part 94 and were certified to a Family Emission Limit (FEL) different from the STD, the NTE limit is the certified FEL multiplied by 1.25.

[2]MTS is maximum test speed, measured in revolutions per minute (rpm).

[3]Disp is displacement, measured in liters per cylinder (l/cyl).

Table 3A. Owner/Operator NMHC and NO_x Emission Standards for Stationary 2007 MY and Later Non-Emergency Engines ≤3,000 HP and <10 l/cyl and 2011 MY and Later Non-Emergency Engines >3,000 HP and <10 l/cyl.

Maximum Engine Power	Model year(s)	Emission Standards in g/KW-hr					
		NMHC + NO_x		NMHC		NO_x	
		Published Emission Standard	NTE Standard w/o ABT[1,2]	Published Emission Standard	NTE Standard w/o ABT[1,2]	Published Emission Standard	NTE Standard w/o ABT[1,2]
KW<8 (HP<11)	all	7.5	9.4				
8≤KW<19 (11≤HP<25)	all	7.5	9.4				
19≤KW<37 (25≤HP<50)	2007-2012	7.5	9.4				
	2013+	4.7	5.9				
37≤KW<56 (50≤HP<75)	2007	7.5	9.4				
	2008+	4.7	5.9				
56≤KW<75 (75≤HP<100)	2007	7.5	9.4				
	2008-2011	4.7	5.9				
	2012-2013[3]			0.19	0.24	0.40	0.60
	2014+			0.19	0.24	0.40	0.60
75≤KW<130 (100≤HP<175)	2007-2011	4.0	5.0				
	2012-2013[3]			0.19	0.24	0.40	0.60
	2014+			0.19	0.24	0.40	0.60
130≤KW<560 (175≤HP<750)	2007-2010	4.0	5.0				
	2011-2013[3]			0.19	0.24	0.40	0.60
	2014+			0.19	0.24	0.40	0.60
KW>560 (HP>750) Except generator sets	2007-2010	6.4	8.0				
	2011-2014			0.40	0.50	3.5	4.4
	2015+			0.19	0.24	3.5	4.4
Generator sets 560<KW≤900 (750<HP≤1,200)	2007-2010	6.4	8.0				
	2011-2014			0.40	0.50	3.5	4.4
	2015+			0.19	0.24	0.67	1.00
Generator sets KW>900 (HP>1,200)	2007-2010	6.4	8.0				
	2011-2014			0.40	0.50	0.67	1.00
	2015+			0.19	0.24	0.67	1.00

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. Except as indicated in footnote 2, the NTE multiplier for each pollutant is 1.25. For engines in engine families that participated in the averaging, banking and trading (ABT) program and were certified to a Family Emission Limit (FEL) different from the STD, the NTE limit is the certified FEL multiplied by 1.25, except as indicated under footnote 2.

[2]If the engine family is certified to a NO_x standard less than 2.50 g/kW-hr without using ABT or the engine family is certified to a NO_x FEL less than 2.50 g/kW-hr or a NO_x+NMHC FEL less than 2.70 g/kW-hr, the multiplier for NO_x, NMHC, and NO_x+NMHC is 1.50.

[3]Phase-in engines only. Phase-out engines meet the earlier standards in these model years.

Table 3B. Owner/Operator CO and PM Emission Standards for Stationary 2007 MY and Later Non-Emergency Engines ≤3,000 HP and <10 l/cyl and 2011 MY and Later Non-Emergency Engines >3,000 HP and <10 l/cyl (cont'd)

Maximum Engine Power	Model year(s)	Emission Standards in g/KW-hr			
		CO		PM	
		Published Emission Standard	NTE Standard w/o ABT[1]	Published Emission Standard	NTE Standard w/o ABT[1,2]
KW<8 (HP<11)	2007	8.0	10.0	0.80	1.00
	2008+	8.0	10.0	0.40	0.50
8≤KW<19 (11≤HP<25)	2007	6.6	8.3	0.80	1.00
	2008+	6.6	8.3	0.40	0.50
19≤KW<37 (25≤HP<50)	2007	5.5	6.9	0.60	0.75
	2008-2012	5.5	6.9	0.30	0.38
	2013+	5.5	6.9	0.03	0.05
37≤KW<56 (50≤HP<75)	2007	5.0	6.3	0.40	0.50
	2008-2012	5.0	6.3	0.30	0.38
	2013+	5.0	6.3	0.03	0.05
56≤KW<75 (75≤HP<100)	2007-2011	5.0	6.3	0.40	0.50
	2012+	5.0	6.3	0.02	0.03
75≤KW<130 (100≤HP<175)	2007-2011	5.0	6.3	0.30	0.38
	2012+	5.0	6.3	0.02	0.03
130≤KW<560 (175≤HP<750)	2007-2010	3.5	4.4	0.20	0.25
	2011+	3.5	4.4	0.02	0.03
KW>560 (HP>750) Except generator sets	2007-2010	3.5	4.4	0.20	0.25
	2011-2014	3.5	4.4	0.10	0.13
	2015+	3.5	4.4	0.04	0.06
Generator sets 560<KW≤900 (750<HP≤1,200)	2007-2010	3.5	4.4	0.20	0.25
	2011-2014	3.5	4.4	0.10	0.13
	2015+	3.5	4.4	0.03	0.05
Generator sets KW>900 (HP>1,200)	2007-2010	3.5	4.4	0.20	0.25
	2011-2014	3.5	4.4	0.10	0.13
	2015+	3.5	4.4	0.03	0.05

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. Except as indicated in footnote 2, the NTE multiplier for each pollutant is 1.25. For engines in engine families that participated in the averaging, banking and trading (ABT) program and were certified to a Family Emission Limit (FEL) different from the STD, the NTE limit is the certified FEL multiplied by 1.25, except as indicated under footnote 2.

[2]If the engine family is certified to a PM standard less than 0.07 g/kW-hr without using ABT or the engine family is certified to a PM FEL less than 0.07 g/kW-hr, the multiplier for PM is 1.50.

Table 4. Owner/Operator Emission Standards for 2007 Model Year and Later Emergency Stationary CI Engines <10 l/cyl (except fire pump engines)

Maximum Engine Power	Model year(s)	Emission Standards in g/KW-hr					
		NMHC + NO_x		CO		PM	
		Published Emission Standard	NTE Standard[1]	Published Emission Standard	NTE Standard[1]	Published Emission Standard	NTE Standard[1]
KW<8 (HP<11)	2007	7.5	9.4	8.0	10.0	0.80	1.00
	2008+	7.5	9.4	8.0	10.0	0.40	0.50
8≤KW<19 (11≤HP<25)	2007	7.5	9.4	6.6	8.3	0.80	1.00
	2008+	7.5	9.4	6.6	8.3	0.40	0.50
19≤KW<37 (25≤HP<50)	2007	7.5	9.4	5.5	6.9	0.60	0.75
	2008+	7.5	9.4	5.5	6.9	0.30	0.38
37≤KW<56 (50≤HP<75)	2007	7.5	5.9	5.0	6.3	0.40	0.50
	2008+	4.7	5.9	5.0	6.3	0.40	0.50
56≤KW<75 (75≤HP<100)	2007	4.7	5.9	5.0	6.3	0.40	0.50
	2008+	4.7	5.9	5.0	6.3	0.40	0.50
75≤KW<130 (100≤HP<175)	2007	4.0	5.0	5.0	6.3	0.30	0.38
	2008+	4.0	5.0	5.0	6.3	0.30	0.38
130≤KW<225 (175≤HP<300)	2007	4.0	5.0	3.5	4.4	0.20	0.25
	2008+	4.0	5.0	3.5	4.4	0.20	0.25
225≤KW<450 (300≤HP<600)	2007	4.0	5.0	3.5	4.4	0.20	0.25
	2008+	4.0	5.0	3.5	4.4	0.20	0.25
450≤KW≤560 (600≤HP≤750)	2007	4.0	5.0	3.5	4.4	0.20	0.25
	2008+	4.0	5.0	3.5	4.4	0.20	0.25
560<KW≤2,237 (750<HP≤3,000)	2007	6.4	8.0	3.5	4.4	0.20	0.25
	2008+	6.4	8.0	3.5	4.4	0.20	0.25
KW>2,237 (HP>3,000)	2007-2010	NO_x: 9.2 HC: 1.3	NO_x: 11.5 HC: 1.8	11.4	14.3	0.54	0.68
	2011+	6.4	8.0	3.5	4.4	0.20	0.25

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. The NTE multiplier for each pollutant is 1.25. For engines in engine families that participated in the averaging, banking and trading (ABT) program and were certified to a Family Emission Limit (FEL) different from the STD, the NTE limit is the certified FEL multiplied by 1.25.

Table 5. Owner/Operator Emission Standards in g/KW-hr for Stationary Fire Pump Engines

Maximum Engine Power	Model year(s)	NMHC + NOx		CO		PM	
		Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard	Published Emission Standard	NTE Standard
KW<8 (HP<11)	2010 and earlier	10.5	13.1	8.0	10.0	1.0	1.25
	2011+	7.5	9.4	8.0	10.0	0.40	0.50
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5	11.9	6.6	8.3	0.80	1.00
	2011+	7.5	9.4	6.6	8.3	0.40	0.50
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5	11.9	5.5	6.9	0.80	1.0
	2011+	7.5	9.4	5.5	6.9	0.30	0.38
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5	13.1	5.0	6.3	0.80	1.00
	2011+	4.7	5.9	5.0	6.3	0.40	0.50
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5	13.1	5.0	6.3	0.80	1.00
	2011+	4.7	5.9	5.0	6.3	0.40	0.50
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5	13.1	5.0	6.3	0.80	1.00
	2010+	4	5.0	5.0	6.3	0.30	0.38
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5	13.1	3.5	4.4	0.54	0.68
	2009+	4	5.0	3.5	4.4	0.20	0.25
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5	13.1	3.5	4.4	0.54	0.68
	2009+	4	5.0	3.5	4.4	0.20	0.25
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5	13.1	3.5	4.4	0.54	0.68
	2009+	4	5.0	3.5	4.4	0.20	0.25
KW>560 (HP>750)	2007 and earlier	10.5	13.1	3.5	4.4	0.54	0.68
	2008+	6.4	8.0	3.5	4.4	0.20	0.25

[1]The NTE standard for each pollutant = (STD) × (M), where STD = Published Emission Standard and M = The NTE multiplier for that pollutant. The NTE multiplier for each pollutant is 1.25. For engines in engine families that participated in the averaging, banking and trading (ABT) program and were certified to a Family Emission Limit (FEL) different from the STD, the NTE limit is the certified FEL multiplied by 1.25.