

§ 34.20

14 CFR Ch. I (1–19 Edition)

**Subpart C—Exhaust Emissions  
(New Aircraft Gas Turbine En-  
gines)**

**§ 34.20 Applicability.**

The provisions of this subpart are applicable to all aircraft gas turbine engines of the classes specified beginning on the dates specified in § 34.21.

**§ 34.21 Standards for exhaust emis-  
sions.**

(a) Exhaust emissions of smoke from each new aircraft gas turbine engine of class T8 manufactured on or after February 1, 1974, shall not exceed a smoke number (SN) of 30.

(b) Exhaust emissions of smoke from each new aircraft gas turbine engine of class TF and of rated output of 129 kN (29,000 lb) thrust or greater, manufactured on or after January 1, 1976, shall not exceed

$SN = 83.6 (rO)^{-0.274}$  (rO is in kN).

(c) Exhaust emission of smoke from each new aircraft gas turbine engine of class T3 manufactured on or after January 1, 1978, shall not exceed a smoke number (SN) of 25.

(d) Gaseous exhaust emissions from each new aircraft gas turbine engine shall not exceed:

(1) For Classes TF, T3, T8 engines greater than 26.7 kN (6,000 lb) rated output:

(i) Engines manufactured on or after January 1, 1984:

Hydrocarbons: 19.6 g/kN rO.

(ii) Engines manufactured on or after July 7, 1997:

Carbon Monoxide: 118 g/kN rO.

(iii) Engines of a type or model of which the date of manufacture of the first individual production model was on or before December 31, 1995, and for which the date of manufacture of the individual engine was on or before December 31, 1999 (Tier 2):

Oxides of Nitrogen:  $(40 + 2(rPR))$  g/kN rO.

(iv) Engines of a type or model of which the date of manufacture of the first individual production model was after December 31, 1995, or for which the date of manufacture of the indi-

vidual engine was after December 31, 1999 (Tier 2):

Oxides of Nitrogen:  $(32 + 1.6(rPR))$  g/kN rO.

(v) The emission standards prescribed in paragraphs (d)(1)(iii) and (iv) of this section apply as prescribed beginning July 7, 1997.

(vi) The emission standards of this paragraph apply as prescribed after December 18, 2005. For engines of a type or model of which the first individual production model was manufactured after December 31, 2003 (Tier 4):

(A) That have a rated pressure ratio of 30 or less and a maximum rated output greater than 89 kN:

Oxides of Nitrogen:  $(19 + 1.6(rPR))$  g/kN rO.

(B) That have a rated pressure ratio of 30 or less and a maximum rated output greater than 26.7 kN but not greater than 89 kN:

Oxides of Nitrogen:  $(37.572 + 1.6(rPR) - 0.2087(rO))$  g/kN rO.

(C) That have a rated pressure ratio greater than 30 but less than 62.5, and a maximum rated output greater than 89 kN:

Oxides of Nitrogen:  $(7 + 2(rPR))$  g/kN rO.

(D) That have a rated pressure ratio greater than 30 but less than 62.5, and a maximum rated output greater than 26.7 kN but not greater than 89 kN:

Oxides of Nitrogen:  $(42.71 + 1.4286(rPR) - 0.4013(rO) + 0.00642(rPR \times rO))$  g/kN rO.

(E) That have a rated pressure ratio of 62.5 or more:

Oxides of Nitrogen:  $(32 + 1.6(rPR))$  g/kN rO.

(2) For Class TSS Engines manufactured on or after January 1, 1984:

Hydrocarbons:  $140 (0.92)^{rPR}$  g/kN rO.

(e) Smoke exhaust emissions from each gas turbine engine of the classes specified below shall not exceed:

(1) For Class TF of rated output less than 26.7 kN (6,000 lb) manufactured on or after August 9, 1985:

$SN = 83.6(rO)^{-0.274}$  (rO is in kN) not to exceed a maximum of SN = 50.