State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-128
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

IT IS ORDERED AND RESOLVED: That the following diesel engines and exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Tractor, Excavator, Combine and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

Engine Family	Displacement Liters	Displacement Cubic Inches	Exhaust Emission Control Systems and Special Features
YCPXL10.3ERK	10.3	632	Engine Control Module Turbocharger Charge Air Cooler

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/bhp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak-values from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	Exhaust Emissions (g/bhp-h)				Smoke Opacity (%)		
	THC	CO	NOx	PM	Accel	Lug	Peak
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.9	2.2	6.6	0.1	8	2	16

BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels—1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 *et seq.*).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 29th day of December 1999.

Raphael Susnowitz

for R. B. Summerfield, Chief
Mobile Source Operations Division

11/29/99

LARGE ENGINE MODEL SUMMARY

EO: U-R-1-128

Manufacturer: **CATERPILLAR INC.**

Process Code: **New Submission**

EPA Engine Family: **YCPXL10.3ERK**

Manufacturer Family Name: **N/A**

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
Note: Peak HP	and Peak torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3176	425 @ 2100	210	148.2	1325 @ 1400	251	118.3	EM, DI, TC, ECM,
2	3176	425 @ 2100	210	148.2	1325 @ 1400	251	118.3	EM, DI, CAC, ECM,
3	3176	390 @ 2100	182	128.3	1250 @ 1400	232	109.3	EM, DI, CAC, ECM,
4	3176	365 @ 2100	176	124.3	1165 @ 1400	223	105.1	EM, DI, CAC, ECM,
5	3176	335 @ 2100	161	113.7	1075 @ 1400	206	96.8	EM, DI, CAC, ECM,
6	3176	310 @ 2100	147	104.1	1000 @ 1400	190	89.6	EM, DI, CAC, ECM,
7	3176	400 @ 2100	192	135.9	1280 @ 1500	242	122.3	EM, DI, CAC, ECM,
8	3176	365 @ 1800	185	130.9	1165 @ 1400	228	107.2	EM, DI, CAC, ECM,
9	3176	365 @ 2100	168	118.8	1163 @ 1400	218	102.5	EM, DI, CAC, ECM,
10	3176	340 @ 2100	167	118.2	1139 @ 1400	215	101.1	EM, DI, CAC, ECM,
11	3176	340 @ 2100	167	118.2	1139 @ 1400	215	101.1	EM, DI, CAC, ECM,
12	3176	330 @ 2100	160	113.2	1089 @ 1400	203	95.4	EM, DI, CAC, ECM,
13	3176	325 @ 2100	161	113.6	1200 @ 1400	230	108.5	EM, DI, CAC, ECM,
14	3176	310 @ 2100	151	106.8	1040 @ 1400	198	93.3	EM, DI, CAC, ECM,
15	3176	310 @ 2100	151	106.8	1040 @ 1400	198	93.3	EM, DI, CAC, ECM,
16	3176	306 @ 2000	148	99.3	942 @ 1400	179	84.4	EM, DI, CAC, ECM,
17	3176	350 @ 2000	168	112.9	1040 @ 1400	203	95.7	EM, DI, CAC, ECM,
18	3176	300 @ 2200	152	102.0	990 @ 1400	184	86.7	EM, DI, CAC, ECM,
19	3176	365 @ 2100	184	130.0	1165 @ 1400	223	105.0	EM, DI, CAC, ECM,

CAC

TC, CAC, ECM