State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-2-43 Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CUMMINS ENGINE COMPANY, INC.

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

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

IT IS ORDERED AND RESOLVED: That the following Cummins Engine Co., Inc. 1999 model-year engines with rated power between 175 and 750 horsepower and exhaust emission control systems are certified as described below in heavy-duty offroad equipment:

<u>Typical Equipment Usage</u>: Crane, Compressor

Fuel Type: Diesel

Displacement Engine Family Liters <u>Cubic Inches</u>			Exhaust Emission Control Systems and Special Features			
XCEXL0661AAB (B353)	10.8	661	Charge Air Cooler Turbocharger Electronic Control Module			

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

<u>Exhaust Emissions (g/hp-h)</u>			<u>_Smoke Opacity (%)</u>			
<u>THC</u>	<u>C0</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	Lug	<u>Peak</u>
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx, and PM exhaust emissions certification values in grams per brake horsepower-hour, and the opacity-of-smoke emissions certification values in percent for this engine family are:

<u>Exhaust Emissions (g/hp-h)</u>			<u>_Smoke Opacity (%)</u>				
<u>THC</u>	<u> </u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	Lug	<u>Peak</u>	
0.1	0.3	6.3	0.05	6	0	16	

BE IT FURTHER RESOLVED: That the listed engine models comply with the "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 the "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 30^{24} day of December 1998.

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ArR. B. Summerfield, Chief Mobile Source Operations Division

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LARGE ENGINE MODEL SUMMARY

9/10/98

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Manufacturer: Cummins Engine Company

Process Code: New Submission

EPA Engine Family: XCEXL0661AAB

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Manufacturer Family Name:

B353

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: 9.Emission Control (#bs/hr)@peak torque Device Per SAE J1930		
CPL 2207 FR 2800 FR 2516	M11-C M11-C	430@1800 400@2100	228 186	138.6 131.8	1450@1300 1400@1300	266 252	116.7 110.8	TC.CAL GUN TC CAL GUN	
FR 2517	M11-C	365@2100	170	120.3	1409@1300	256	112.3		
FR 2816	M11-C	260@2100	126	88.9	1030@1300	156	68.5	TO CAC ECA	
					1000@1000	100	00.0	TC CAC GCA	^
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