State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-7-50
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

DETROIT DIESEL CORPORATION

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

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and Detroit Diesel Corporation and any modification to the Settlement Agreement;

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: Crane, Tractor, Pump, Compressor, Generator

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
YDDXL11.1THD (Series 60, 11.1 L)	11.1	677	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 value 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	0.2	0.6	6.8	0.1	6	1	14

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.*).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement.

Engines certified under this Executive Order must conform to all applicable California emission regulations and to all applicable terms and conditions of the Settlement Agreement.

Executed at El Monte, California this 6th day of January 2000.

R. B. Summerfield, Chief
Mobile Source Operations Division

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LARGE ENGINE MODEL SUMMARY

Manufacturer: **Detroit Diesel Corporation** Process Code: **New Submission**

EO: U-R-7-50

EPA Engine Family: **YDDXL11.1THD** Manufacturer Family Name: **SERIES 60, 11.1L**

Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate: mm/stroke @ peak HP (for diesel only)	Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm/stroke@peak torque	Fuel Rate: (lbs/hr)@peak torque	Emission Control Device Per SAE J1930
1A21	S60, 11.1L	325 @ 2100	156.1	109.0	1150 @ 1200	208.7	83.3	EC TAA
1A18		325 @ 1800	171.1	102.4	1150 @ 1200	208.7	83.3	EC TAA
1B21	S60, 11.1L	300 @ 2100	146.1	102.0	1050 @ 1200	195.5	78.0	EC TAA
1B18		300 @ 1800	154.9	92.7	1050 @ 1200	195.5	78.0	EC TAA
1C21	S60, 11.1L	285 @ 2100	139.9	97.7	1000 @ 1200	185.6	74.1	EC TAA
1C18		285 @ 1800	147.7	88.4	1000 @ 1200	185.6	74.1	EC TAA
1D21	S60, 11.1L	330 @ 2100	158.5	110.7	1250 @ 1200	227.8	90.9	EC TAA
1D18		340 @ 1800	173.7	104.0	1250 @ 1200	227.8	90.9	EC TAA
1E21	S60, 11.1L	350 @ 2100	177.7	124.1	1350 @ 1200	256.1	102.2	EC TAA

TC, CAC, ECM