California Environmental Protection Agency AIR RESOURCES BOARD	CNH UK LIMITED	EXECUTIVE ORDER U-R-008-0103 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2011	BNHXL04.5DAA	4.5	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Mechanical Diesel Injection, Turbocharger, Charge Air Cooler, and Smoke Puff Limiter	Loader, Tractor, and Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ kW < 130	Tier 3	STD	N/A	N/A	4.0	5.0	0.30	20	15	50
		CERT	--	--	3.9	1.1	0.21	9	5	21

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

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

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 26 day of October 2010.

Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

Attachment
10/13/2010

Engine Family	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
BNHXL04.5DAA	445TA/MLF	F4GE9484D*J	125 @ 2200	97	N/A	387 @ 1250	125.5	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLJ	F4GE9484B*J	110 @ 2200	88	N/A	336 @ 1400	110	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLE	F4GE9484J*J / F4CE9484J*J	118 @ 2200	96	N/A	380 @ 1250	125	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLM	F4CE9484G*J/ F4GE9484G*J	110 @ 2200	88	N/A	376 @ 1250	120	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLL	F4GE9484H*J	113 @ 2000	99	N/A	365 @ 1200	120	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLH	F4GE9484E*J	121 @ 2000	106	N/A	387 @ 1200	125	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLG	F4GE9484A*J	126 @ 2300	103	N/A	369 @ 1300	123	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLA	F4CE9484C*J	111 @ 2300	88	N/A	328 @ 1300	107	N/A	DDI TC CAC SPL
BNHXL04.5DAA	445TA/MLN	F4CE9484L*J	105 @ 2300	85	N/A	313 @ 1300	104	N/A	DDI TC CAC SPL

MDI